

**UTG 96 (unleaded test gasoline)**

Version 5.2

Revision Date 2026-08-19

**SECTION 1: Identification of the substance/mixture and of the company/undertaking****Product information**

Product Name : UTG 96 (unleaded test gasoline)  
Material : 1021671, 1032452, 1021667, 1021669, 1021670, 1021668  
Use : Reference Fuel  
Uses advised against : This material should not be used for purposes other than the identified uses in section 1 without expert advice.

**Company** : Chevron Phillips Chemical Company LP  
9500 Lakeside Blvd.  
The Woodlands, TX 77381

**Emergency telephone:****Health:**

866.442.9628 (North America)

1.832.813.4984 (International)

**Transport:**

CHEMTREC 800.424.9300 or 703.527.3887(int'l)

Asia: CHEMWATCH (+612 9186 1132) China: 0532 8388 9090

Mexico CHEMTREC 01-800-681-9531 (24 hours)

South America SOS-Cotec Inside Brazil: 0800.111.767 Outside Brazil: +55.19.3467.1600

Argentina: +(54)-1159839431

EUROPE: BIG +32.14.584545 (phone) or +32.14583516 (telefax)

Austria: VIZ +43 1 406 43 43 (24 hours/day, 7 days/week)

Belgium: 070 245 245 (24 hours/day, 7 days/week)

Bulgaria: +359 2 9154 233

Croatia: +3851 2348 342 (24 hours/day, 7 days/week)

Cyprus: 1401

Czech Republic: Toxicological Information Center +420 224 919 293, +420 224 915 402

Denmark: Danish Poison Center (Giftlinjen): +45 8212 1212

Estonia: BIG +32.14.584545 (phone) or +32.14583516 (telefax)

Finland: 0800 147 111 09 471 977 (24 hours/day)

France: ORFILA number (INRS): + 33 (0) 1 45 42 59 59 (24 hours/day, 7 days/week)

Germany: BIG +32.14.584545 (phone) or +32.14583516 (telefax)

Greece: (0030) 2107793777 (24 hours/day, 7 days/week)

Hungary: +36-80-201-199 (24 hours/day, 7 days/week)

Iceland: 543 2222 (24 hours/day, 7 days/week)

Ireland: BIG +32.14.584545 (phone) or +32.14583516 (telefax)

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Italy: POISON CENTER MILAN – Azienda Ospedaliera Niguarda Ca` Grande Tel. +39 02 66101029; POISON CENTER ROME – Policlinico “Agostino Gemelli”, Servizio di tossicologia clinica Tel. +39 06 3054343; POISON CENTER ROME – Ospedale Pediatrico Bambino Gesù Tel. +39 06 68593726; POISON CENTER ROME – Policlinico “Umberto I” Tel. +39 06 4997 8000; POISON CENTER FOGGIA – Azienda Ospedaliera Universitaria Riuniti Tel. +39 0881 732326; POISON CENTER NAPLES – Azienda Ospedaliera “Antonio Cardarelli” Tel. +39 081 7472870; POISON CENTER FLORENCE – Azienda Ospedaliera universitaria Careggi Tel. +39 055 7947819; POISON CENTER PAVIA – IRCCS Fondazione Salvatore Maugeri Tel. +39 0382 24444; POISON CENTER BERGAMO – Azienda Ospedaliera “Papa Giovanni XXIII” Tel. 800 883 300; POISON CENTER VERONA – Azienda Ospedaliera Universitaria integrata Tel. 800 011 858;

Latvia: State Fire and Rescue Service, phone number: 112; Toxicology and Sepsis Clinic Poisoning and Drug Information Center, Hipokrāta 2, Riga, Latvia, LV-1038, phone number +371 67042473. (24 hours.)

Liechtenstein: BIG +32.14.584545 (phone) or +32.14583516 (telefax)

Lithuania: +370 (85) 2362052

Luxembourg: (+352) 8002 5500 (24 hours/day, 7 days/week)

Malta: +356 2395 2000

The Netherlands: NVIC: +31 (0)88 755 8000

Norway: 22 59 13 00 (24 hours/day, 7 days/week)

Poland: BIG +32.14.584545 (phone) or +32.14583516 (telefax)

Portugal: CIAV phone number: +351 800 250 250

Romania: +40213183606

Slovakia: +421 2 5477 4166

Slovenia: Phone number: 112

Spain: National Emergency Telephone Number of Spanish Poison Centre: +34 91 562 04 20 (24 hours/day, 7 days/week)

Sweden: 112 – ask for Poisons Information

Organization that prepared the SDS : Product Safety and Toxicology Group

E-mail address : SDS@CPChem.com

Website : www.CPChem.com

**SECTION 2: Hazards identification****Classification of the substance or mixture**

This product has been classified in accordance with the hazard communication standard 29 CFR 1910.1200; the SDS and labels contain all the information as required by the standard.

**Classification**

: Flammable liquids, Category 1  
 Skin irritation, Category 2  
 Germ cell mutagenicity, Category 1B  
 Carcinogenicity, Category 1A  
 Reproductive toxicity, Category 2  
 Specific target organ toxicity - single exposure, Category 3, Central nervous system  
 Specific target organ toxicity - repeated exposure, Category 2, Inhalation, Auditory organs, color vision  
 Aspiration hazard, Category 1

**Labeling**

Symbol(s)

:



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Signal Word : Danger

Hazard Statements : H224: Extremely flammable liquid and vapor.  
 H304: May be fatal if swallowed and enters airways.  
 H315: Causes skin irritation.  
 H336: May cause drowsiness or dizziness.  
 H340: May cause genetic defects.  
 H350: May cause cancer.  
 H361: Suspected of damaging fertility or the unborn child.  
 H373: May cause damage to organs (Auditory organs, color vision) through prolonged or repeated exposure if inhaled.

Precautionary Statements : **Prevention:**  
 P201 Obtain special instructions before use.  
 P202 Do not handle until all safety precautions have been read and understood.  
 P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
 P233 Keep container tightly closed.  
 P240 Ground and bond container and receiving equipment.  
 P241 Use explosion-proof electrical/ ventilating/ lighting/ equipment.  
 P242 Use non-sparking tools.  
 P243 Take action to prevent static discharges.  
 P260 Do not breathe mist or vapors.  
 P264 Wash skin thoroughly after handling.  
 P271 Use only outdoors or in a well-ventilated area.  
 P280 Wear protective gloves/ protective clothing/ eye protection/ face protection/ hearing protection.  
**Response:**  
 P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.  
 P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.  
 P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor if you feel unwell.  
 P308 + P313 IF exposed or concerned: Get medical advice/ attention.  
 P331 Do NOT induce vomiting.  
 P332 + P313 If skin irritation occurs: Get medical advice/ attention.  
 P362 + P364 Take off contaminated clothing and wash it before reuse.  
 P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.  
**Storage:**  
 P403 + P233 Store in a well-ventilated place. Keep container tightly closed.  
 P403 + P235 Store in a well-ventilated place. Keep cool.  
 P405 Store locked up.  
**Disposal:**  
 P501 Dispose of contents/ container to an approved waste disposal plant.

**Carcinogenicity:**

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**IARC**

Group 1: Carcinogenic to humans

Benzene 71-43-2

Group 2B: Possibly carcinogenic to humans

Naphtha, Petroleum, Heavy 64741-54-4

Catalytic Cracked

Naphtha (petroleum), light 64741-63-5

catalytic reformed

Hydrocarbons, C3-11, 68476-46-0

catalytic cracker distillates

Naphtha (petroleum), light 64741-66-8

alkylate

Ethylbenzene 100-41-4

Naphthalene 91-20-3

Isoprene 78-79-5

**NTP**

Known to be human carcinogen

Benzene 71-43-2

Reasonably anticipated to be a human carcinogen

Naphthalene 91-20-3

Isoprene 78-79-5

**SECTION 3: Composition/information on ingredients**

Synonyms : Unleaded Test Gasoline-96 RON

Molecular formula : Mixture

| Component                                          | CAS-No.     | Weight % |
|----------------------------------------------------|-------------|----------|
| Naphtha, Petroleum, Heavy Catalytic Cracked        | 64741-54-4  | 0 - 100  |
| Naphtha (petroleum), light catalytic reformed      | 64741-63-5  | 0 - 100  |
| Hydrocarbons, C3-11, catalytic cracker distillates | 68476-46-0  | 0 - 100  |
| Naphtha (petroleum), light alkylate                | 64741-66-8  | 0 - 60   |
| Toluene                                            | 108-88-3    | 0 - 60   |
| Isopentane                                         | 78-78-4     | 0 - 40   |
| 3,3-Dimethylpentane                                | 562-49-2    | 0 - 60   |
| 2,2,4-Trimethylpentane (Isooctane)                 | 540-84-1    | 0 - 30   |
| Xylenes                                            | 1330-20-7   | 0 - 25   |
| C9-C11 Isoalkanes                                  | 68551-16-6  | 0 - 20   |
| Isoalkanes C7-8                                    | 70024-92-9  | 0 - 20   |
| Heptane, branched, cyclic and linear               | 426260-76-6 | 0 - 20   |
| Cyclopentane                                       | 287-92-3    | 0 - 20   |
| n-Heptane                                          | 142-82-5    | 0 - 20   |
| n-Butane                                           | 106-97-8    | 0 - 20   |
| n-hexane                                           | 110-54-3    | 0 - 20   |
| 1-Hexene                                           | 592-41-6    | 0 - 10   |
| Ethylbenzene                                       | 100-41-4    | 0 - 10   |
| 1,2,4-Trimethylbenzene                             | 95-63-6     | 0 - 10   |
| 2,2-Dimethylbutane                                 | 75-83-2     | 0 - 10   |
| 2-Methylpentane                                    | 107-83-5    | 0 - 10   |
| Naphthalene                                        | 91-20-3     | 0 - 10   |
| Benzene                                            | 71-43-2     | 0 - 5    |
| 3-Methylpentane                                    | 96-14-0     | 0 - 5    |
| 2-Methylhexane                                     | 591-76-4    | 0 - 5    |

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|                        |           |       |
|------------------------|-----------|-------|
| Methylcyclopentane     | 96-37-7   | 0 - 5 |
| 3-Methylhexane         | 589-34-4  | 0 - 5 |
| 2-methyl-2-butene      | 513-35-9  | 0 - 5 |
| Cyclohexane            | 110-82-7  | 0 - 5 |
| 2,3-Dimethylbutane     | 79-29-8   | 0 - 5 |
| 2,3-Dimethylpentane    | 565-59-3  | 0 - 5 |
| 2,4-Dimethylpentane    | 108-08-7  | 0 - 5 |
| n-Pentane              | 109-66-0  | 0 - 5 |
| Methylcyclohexane      | 108-87-2  | 0 - 5 |
| 2,3,4-Trimethylpentane | 565-75-3  | 0 - 5 |
| Hydrogen Sulfide       | 7783-06-4 | 0 - 1 |
| Isoprene               | 78-79-5   | 0 - 1 |

**SECTION 4: First aid measures**

- General advice : Move out of dangerous area. Show this material safety data sheet to the doctor in attendance. Material may produce a serious, potentially fatal pneumonia if swallowed or vomited.
- If inhaled : Consult a physician after significant exposure. If unconscious, place in recovery position and seek medical advice.
- In case of skin contact : If skin irritation persists, call a physician. If on skin, rinse well with water. If on clothes, remove clothes.
- In case of eye contact : Flush eyes with water as a precaution. Remove contact lenses. Protect unharmed eye. Keep eye wide open while rinsing. If eye irritation persists, consult a specialist.
- If swallowed : Keep respiratory tract clear. Do NOT induce vomiting. Do not give milk or alcoholic beverages. Never give anything by mouth to an unconscious person. If symptoms persist, call a physician. Take victim immediately to hospital.

**Notes to physician**

- Risks : May be fatal if swallowed and enters airways. Causes skin irritation. May cause drowsiness or dizziness. May cause genetic defects. May cause cancer. Suspected of damaging fertility or the unborn child. May cause damage to organs through prolonged or repeated exposure if inhaled. May be fatal if swallowed and enters airways. Causes skin irritation. May cause drowsiness or dizziness. May cause genetic defects. May cause cancer. Suspected of damaging fertility or the unborn child. May cause damage to organs through prolonged or repeated exposure if inhaled.
- Treatment : Treat symptomatically.

**SECTION 5: Firefighting measures**

- Flash point : -37°C (-35°F)  
Method: PMCC
- Suitable extinguishing : Alcohol-resistant foam. Carbon dioxide (CO<sub>2</sub>). Dry chemical.

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Unsuitable extinguishing media : High volume water jet.

Specific hazards during fire fighting : Do not allow run-off from fire fighting to enter drains or water courses.

Special protective equipment for fire-fighters : Wear self-contained breathing apparatus for firefighting if necessary.

Further information : Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. For safety reasons in case of fire, cans should be stored separately in closed containments. Use a water spray to cool fully closed containers.

Fire and explosion protection : Do not spray on a naked flame or any incandescent material. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors). Use only explosion-proof equipment. Keep away from open flames, hot surfaces and sources of ignition.

Hazardous decomposition products : Carbon oxides.

**SECTION 6: Accidental release measures**

Personal precautions : Use personal protective equipment. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas.

Environmental precautions : Prevent product from entering drains. Prevent further leakage or spillage if safe to do so. If the product contaminates rivers and lakes or drains inform respective authorities.

Methods for cleaning up : Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).

**SECTION 7: Handling and storage****Handling**

Advice on safe handling : Avoid formation of aerosol. Do not breathe vapors/dust. Avoid exposure - obtain special instructions before use. Avoid contact with skin and eyes. For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area. Take precautionary measures against static discharges. Provide sufficient air exchange and/or exhaust in work rooms. Open drum carefully as content may be under pressure. Dispose of rinse water in accordance with local and national regulations.

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Advice on protection against fire and explosion : Do not spray on a naked flame or any incandescent material. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors). Use only explosion-proof equipment. Keep away from open flames, hot surfaces and sources of ignition.

**Storage**

Requirements for storage areas and containers : No smoking. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Observe label precautions. Electrical installations / working materials must comply with the technological safety standards.

Uses advised against : This material should not be used for purposes other than the identified uses in section 1 without expert advice.

Use : Reference Fuel

**SECTION 8: Exposure controls/personal protection****Ingredients with workplace control parameters****Chevron Phillips Chemical Company LP**

| Components        | Basis        | Value | Control parameters | Note |
|-------------------|--------------|-------|--------------------|------|
| C9-C11 Isoalkanes | Manufacturer | TWA   | 1,200 mg/m3        | RCP, |
| Isoalkanes C7-8   | Manufacturer | TWA   | 300 ppm,           |      |

RCP Reciprocal Calculation Procedure

**US**

| Components                                         | Basis      | Value | Control parameters   | Note        |
|----------------------------------------------------|------------|-------|----------------------|-------------|
| Naphtha, Petroleum, Heavy Catalytic Cracked        | OSHA Z-1-A | TWA   | 400 ppm, 1,600 mg/m3 |             |
|                                                    | OSHA Z-1   | TWA   | 500 ppm, 2,000 mg/m3 |             |
| Naphtha (petroleum), light catalytic reformed      | OSHA Z-1-A | TWA   | 400 ppm, 1,600 mg/m3 |             |
|                                                    | OSHA Z-1   | TWA   | 500 ppm, 2,000 mg/m3 |             |
| Hydrocarbons, C3-11, catalytic cracker distillates | OSHA Z-1   | TWA   | 500 ppm, 2,000 mg/m3 |             |
|                                                    | OSHA Z-1-A | TWA   | 400 ppm, 1,600 mg/m3 |             |
| Naphtha (petroleum), light alkylate                | OSHA Z-1-A | TWA   | 400 ppm, 1,600 mg/m3 |             |
|                                                    | OSHA Z-1   | TWA   | 500 ppm, 2,000 mg/m3 |             |
|                                                    | OSHA Z-1   | TWA   | 5 mg/m3              | Mist        |
|                                                    | OSHA Z-1-A | TWA   | 5 mg/m3              | Mist        |
|                                                    | NIOSH REL  | TWA   | 5 mg/m3              | Mist        |
|                                                    | NIOSH REL  | ST    | 10 mg/m3             | Mist        |
|                                                    | CAL PEL    | PEL   | 5 mg/m3              | particulate |
| Toluene                                            | ACGIH      | TWA   | 20 ppm,              | OTO, A4,    |
|                                                    | OSHA Z-2   | TWA   | 200 ppm,             |             |
|                                                    | OSHA Z-2   | CEIL  | 300 ppm,             |             |
|                                                    | OSHA Z-2   | Peak  | 500 ppm,             |             |
|                                                    | OSHA Z-1-A | TWA   | 100 ppm, 375 mg/m3   |             |
|                                                    | OSHA Z-1-A | STEL  | 150 ppm, 560 mg/m3   |             |
| Isopentane                                         | ACGIH      | TWA   | 1,000 ppm,           |             |
| 3,3-Dimethylpentane                                | ACGIH      | TWA   | 400 ppm,             |             |
|                                                    | ACGIH      | STEL  | 500 ppm,             |             |
| 2,2,4-Trimethylpentane (Isooctane)                 | ACGIH      | TWA   | 300 ppm,             |             |
| Xylenes                                            | OSHA Z-1   | TWA   | 100 ppm, 435 mg/m3   |             |
|                                                    | OSHA Z-1-A | STEL  | 150 ppm, 655 mg/m3   |             |
|                                                    | OSHA Z-1-A | TWA   | 100 ppm, 435 mg/m3   |             |
|                                                    | ACGIH      | TWA   | 20 ppm,              | OTO, A4,    |
|                                                    | ACGIH      | STEL  | 150 ppm,             | A4,         |
| Heptane, branched, cyclic and linear               | ACGIH      | TWA   | 400 ppm,             |             |
|                                                    | ACGIH      | STEL  | 500 ppm,             |             |
| Cyclopentane                                       | ACGIH      | TWA   | 1,000 ppm,           |             |
|                                                    | OSHA Z-1-A | TWA   | 600 ppm, 1,720 mg/m3 |             |
| n-Heptane                                          | OSHA Z-1   | TWA   | 500 ppm, 2,000 mg/m3 |             |

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|                        | OSHA Z-1-A               | TWA  | 400 ppm, 1,600 mg/m3   |                                                           |
|                        | OSHA Z-1-A               | STEL | 500 ppm, 2,000 mg/m3   |                                                           |
|                        | ACGIH                    | TWA  | 200 ppm,               | OTO,                                                      |
|                        | ACGIH                    | STEL | 400 ppm,               | OTO,                                                      |
| n-Butane               | OSHA Z-1-A               | TWA  | 800 ppm, 1,900 mg/m3   |                                                           |
|                        | ACGIH                    | STEL | 1,000 ppm,             |                                                           |
| n-hexane               | ACGIH                    | TWA  | 50 ppm,                | Skin,                                                     |
|                        | OSHA Z-1                 | TWA  | 500 ppm, 1,800 mg/m3   |                                                           |
|                        | OSHA Z-1-A               | TWA  | 50 ppm, 180 mg/m3      |                                                           |
| 1-Hexene               | ACGIH                    | TWA  | 50 ppm,                |                                                           |
| 1,2,4-Trimethylbenzene | ACGIH                    | TWA  | 25 ppm,                |                                                           |
|                        | OSHA Z-1-A               | TWA  | 25 ppm, 125 mg/m3      |                                                           |
|                        | ACGIH                    | TWA  | 10 ppm,                | A4,                                                       |
| Ethylbenzene           | OSHA Z-1                 | TWA  | 100 ppm, 435 mg/m3     |                                                           |
|                        | OSHA Z-1-A               | TWA  | 100 ppm, 435 mg/m3     |                                                           |
|                        | OSHA Z-1-A               | STEL | 125 ppm, 545 mg/m3     |                                                           |
|                        | ACGIH                    | TWA  | 20 ppm,                | OTO, A3,                                                  |
| 2,2-Dimethylbutane     | OSHA Z-1-A               | TWA  | 500 ppm, 1,800 mg/m3   |                                                           |
|                        | OSHA Z-1-A               | STEL | 1,000 ppm, 3,600 mg/m3 |                                                           |
|                        | ACGIH                    | TWA  | 200 ppm,               | A3,                                                       |
| 2-Methylpentane        | OSHA Z-1-A               | TWA  | 500 ppm, 1,800 mg/m3   |                                                           |
|                        | OSHA Z-1-A               | STEL | 1,000 ppm, 3,600 mg/m3 |                                                           |
|                        | ACGIH                    | TWA  | 200 ppm,               | A3,                                                       |
| Naphthalene            | ACGIH                    | TWA  | 10 ppm,                | A3, Skin,                                                 |
|                        | ACGIH                    | STEL | 15 ppm,                | hematologic eff, URT irr, eye irr, eye dam, (), A4, Skin, |
|                        | OSHA Z-1                 | TWA  | 10 ppm, 50 mg/m3       |                                                           |
|                        | OSHA Z-1-A               | TWA  | 10 ppm, 50 mg/m3       |                                                           |
|                        | OSHA Z-1-A               | STEL | 15 ppm, 75 mg/m3       |                                                           |
| Benzene                | ACGIH                    | TWA  | 0.02 ppm,              | A1, Skin,                                                 |
|                        | OSHA Z-1-A               | TWA  | 1 ppm,                 |                                                           |
|                        | OSHA Z-1-A               | CEIL | 5 ppm,                 |                                                           |
|                        | OSHA Z-2                 | Peak | 50 ppm,                |                                                           |
|                        | OSHA 29 CFR 1910.1028(c) | TWA  | 1 ppm,                 |                                                           |
|                        | OSHA 29 CFR 1910.1028(c) | STEL | 5 ppm,                 |                                                           |
|                        | OSHA CARC                | PEL  | 1 ppm,                 |                                                           |
|                        | OSHA CARC                | STEL | 5 ppm,                 |                                                           |
| 3-Methylpentane        | OSHA Z-1-A               | TWA  | 500 ppm, 1,800 mg/m3   |                                                           |
|                        | OSHA Z-1-A               | STEL | 1,000 ppm, 3,600 mg/m3 |                                                           |
|                        | ACGIH                    | TWA  | 200 ppm,               | A3,                                                       |
| 2-Methylhexane         | ACGIH                    | TWA  | 400 ppm,               |                                                           |
|                        | ACGIH                    | STEL | 500 ppm,               |                                                           |
| Methylcyclopentane     | ACGIH                    | TWA  | 500 ppm,               | CNS impair, URT irr, eye irr,                             |
|                        | ACGIH                    | STEL | 1,000 ppm,             | CNS impair, URT irr, eye irr,                             |
|                        | OSHA Z-1-A               | TWA  | 500 ppm, 1,800 mg/m3   |                                                           |
|                        | OSHA Z-1-A               | STEL | 1,000 ppm, 3,600 mg/m3 |                                                           |
| 3-Methylhexane         | ACGIH                    | TWA  | 400 ppm,               |                                                           |
|                        | ACGIH                    | STEL | 500 ppm,               |                                                           |
| 2-methyl-2-butene      | ACGIH                    | TWA  | 10 ppm,                |                                                           |
| Cyclohexane            | ACGIH                    | TWA  | 100 ppm,               |                                                           |
|                        | OSHA Z-1                 | TWA  | 300 ppm, 1,050 mg/m3   |                                                           |
|                        | OSHA Z-1-A               | TWA  | 300 ppm, 1,050 mg/m3   |                                                           |
| 2,3-Dimethylbutane     | OSHA Z-1-A               | TWA  | 500 ppm, 1,800 mg/m3   |                                                           |
|                        | OSHA Z-1-A               | STEL | 1,000 ppm, 3,600 mg/m3 |                                                           |
|                        | ACGIH                    | TWA  | 200 ppm,               | A3,                                                       |
| 2,3-Dimethylpentane    | ACGIH                    | TWA  | 200 ppm,               | OTO,                                                      |
|                        | ACGIH                    | STEL | 400 ppm,               | OTO,                                                      |
| 2,4-Dimethylpentane    | ACGIH                    | TWA  | 200 ppm,               | OTO,                                                      |
|                        | ACGIH                    | STEL | 400 ppm,               | OTO,                                                      |
| n-Pentane              | OSHA Z-1                 | TWA  | 1,000 ppm, 2,950 mg/m3 |                                                           |
|                        | OSHA Z-1-A               | TWA  | 600 ppm, 1,800 mg/m3   |                                                           |
|                        | OSHA Z-1-A               | STEL | 750 ppm, 2,250 mg/m3   |                                                           |
|                        | ACGIH                    | TWA  | 1,000 ppm,             |                                                           |
| Methylcyclohexane      | ACGIH                    | TWA  | 100 ppm,               |                                                           |
|                        | OSHA Z-1                 | TWA  | 500 ppm, 2,000 mg/m3   |                                                           |
|                        | OSHA Z-1-A               | TWA  | 400 ppm, 1,600 mg/m3   |                                                           |
| 2,3,4-Trimethylpentane | ACGIH                    | TWA  | 300 ppm,               |                                                           |
| Hydrogen Sulfide       | ACGIH                    | TWA  | 1 ppm,                 |                                                           |
|                        | ACGIH                    | STEL | 5 ppm,                 |                                                           |
|                        | OSHA Z-2                 | CEIL | 20 ppm,                |                                                           |
|                        | OSHA Z-2                 | Peak | 50 ppm,                |                                                           |
|                        | OSHA Z-1-A               | TWA  | 10 ppm, 14 mg/m3       |                                                           |
|                        | OSHA Z-1-A               | STEL | 15 ppm, 21 mg/m3       |                                                           |

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|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-----|--------|--|
| Isoprene                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | US WEEL | TWA | 2 ppm, |  |
| () Adopted values or notations enclosed are those for which changes are proposed in the NIC<br>A1 Confirmed human carcinogen<br>A3 Confirmed animal carcinogen with unknown relevance to humans<br>A4 Not classifiable as a human carcinogen<br>CNS impair Central Nervous System impairment<br>eye dam Eye damage<br>eye irr Eye irritation<br>hematologic eff Hematologic effects<br>OTO Ototoxicant<br>Skin Danger of cutaneous absorption<br>URT irr Upper Respiratory Tract irritation |         |     |        |  |

**Immediately Dangerous to Life or Health Concentrations (IDLH)**

| Substance name                      | CAS-No.    | Control parameters                                                                       | Update     |
|-------------------------------------|------------|------------------------------------------------------------------------------------------|------------|
| Toluene                             | 108-88-3   | Immediately Dangerous to Life or Health<br>Concentration Value<br>500 parts per million  | 1995-03-01 |
| Naphtha (petroleum), light alkylate | 64741-66-8 | Immediately Dangerous to Life or Health<br>Concentration Value<br>2500 mg/m <sup>3</sup> | 2020-07-01 |
| n-Heptane                           | 142-82-5   | Immediately Dangerous to Life or Health<br>Concentration Value<br>750 parts per million  | 1995-03-01 |
| Xylenes                             | 1330-20-7  | Immediately Dangerous to Life or Health<br>Concentration Value<br>900 parts per million  | 2017-09-01 |
| n-Butane                            | 106-97-8   | Immediately Dangerous to Life or Health<br>Concentration Value<br>1600 parts per million | 2017-02-03 |
| Naphthalene                         | 91-20-3    | Immediately Dangerous to Life or Health<br>Concentration Value<br>250 parts per million  | 1995-03-01 |
| Benzene                             | 71-43-2    | Immediately Dangerous to Life or Health<br>Concentration Value<br>500 parts per million  | 1995-03-01 |
| n-hexane                            | 110-54-3   | Immediately Dangerous to Life or Health<br>Concentration Value<br>1100 parts per million | 1995-03-01 |
| Ethylbenzene                        | 100-41-4   | Immediately Dangerous to Life or Health<br>Concentration Value<br>800 parts per million  | 1995-03-01 |
| n-Pentane                           | 109-66-0   | Immediately Dangerous to Life or Health<br>Concentration Value<br>1500 parts per million | 1995-03-01 |
| n-Octane                            | 111-65-9   | Immediately Dangerous to Life or Health<br>Concentration Value<br>1000 parts per million | 1995-03-01 |
| Toluene                             | 108-88-3   | Immediately Dangerous to Life or Health<br>Concentration Value<br>500 parts per million  | 1995-03-01 |
| Naphtha (petroleum), light alkylate | 64741-66-8 | Immediately Dangerous to Life or Health<br>Concentration Value<br>2500 mg/m <sup>3</sup> | 2020-07-01 |
| n-Heptane                           | 142-82-5   | Immediately Dangerous to Life or Health<br>Concentration Value<br>750 parts per million  | 1995-03-01 |
| Xylenes                             | 1330-20-7  | Immediately Dangerous to Life or Health<br>Concentration Value<br>900 parts per million  | 2017-09-01 |
| n-Butane                            | 106-97-8   | Immediately Dangerous to Life or Health<br>Concentration Value<br>1600 parts per million | 2017-02-03 |
| Naphthalene                         | 91-20-3    | Immediately Dangerous to Life or Health<br>Concentration Value<br>250 parts per million  | 1995-03-01 |
| Benzene                             | 71-43-2    | Immediately Dangerous to Life or Health<br>Concentration Value<br>500 parts per million  | 1995-03-01 |

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|                                     |            |                                                                                          |            |
|-------------------------------------|------------|------------------------------------------------------------------------------------------|------------|
| n-hexane                            | 110-54-3   | Immediately Dangerous to Life or Health<br>Concentration Value<br>1100 parts per million | 1995-03-01 |
| Ethylbenzene                        | 100-41-4   | Immediately Dangerous to Life or Health<br>Concentration Value<br>800 parts per million  | 1995-03-01 |
| n-Pentane                           | 109-66-0   | Immediately Dangerous to Life or Health<br>Concentration Value<br>1500 parts per million | 1995-03-01 |
| n-Octane                            | 111-65-9   | Immediately Dangerous to Life or Health<br>Concentration Value<br>1000 parts per million | 1995-03-01 |
| Methylcyclohexane                   | 108-87-2   | Immediately Dangerous to Life or Health<br>Concentration Value<br>1200 parts per million | 1995-03-01 |
| Cyclohexane                         | 110-82-7   | Immediately Dangerous to Life or Health<br>Concentration Value<br>1300 parts per million | 1995-03-01 |
| Propane                             | 74-98-6    | Immediately Dangerous to Life or Health<br>Concentration Value<br>2100 parts per million | 1995-03-01 |
| Naphtha (petroleum), light alkylate | 64741-66-8 | Immediately Dangerous to Life or Health<br>Concentration Value<br>2500 mg/m <sup>3</sup> | 2020-07-01 |
| Toluene                             | 108-88-3   | Immediately Dangerous to Life or Health<br>Concentration Value<br>500 parts per million  | 1995-03-01 |
| Xylenes                             | 1330-20-7  | Immediately Dangerous to Life or Health<br>Concentration Value<br>900 parts per million  | 2017-09-01 |
| n-Heptane                           | 142-82-5   | Immediately Dangerous to Life or Health<br>Concentration Value<br>750 parts per million  | 1995-03-01 |
| n-Butane                            | 106-97-8   | Immediately Dangerous to Life or Health<br>Concentration Value<br>1600 parts per million | 2017-02-03 |
| n-hexane                            | 110-54-3   | Immediately Dangerous to Life or Health<br>Concentration Value<br>1100 parts per million | 1995-03-01 |
| Ethylbenzene                        | 100-41-4   | Immediately Dangerous to Life or Health<br>Concentration Value<br>800 parts per million  | 1995-03-01 |
| Naphthalene                         | 91-20-3    | Immediately Dangerous to Life or Health<br>Concentration Value<br>250 parts per million  | 1995-03-01 |
| Benzene                             | 71-43-2    | Immediately Dangerous to Life or Health<br>Concentration Value<br>500 parts per million  | 1995-03-01 |
| Cyclohexane                         | 110-82-7   | Immediately Dangerous to Life or Health<br>Concentration Value<br>1300 parts per million | 1995-03-01 |
| n-Pentane                           | 109-66-0   | Immediately Dangerous to Life or Health<br>Concentration Value<br>1500 parts per million | 1995-03-01 |
| Methylcyclohexane                   | 108-87-2   | Immediately Dangerous to Life or Health<br>Concentration Value<br>1200 parts per million | 1995-03-01 |
| Hydrogen Sulfide                    | 7783-06-4  | Immediately Dangerous to Life or Health<br>Concentration Value<br>100 parts per million  | 1995-03-01 |

**Biological exposure indices****US**

| Substance name | CAS-No.  | Control parameters            | Sampling time                                            | Update     |
|----------------|----------|-------------------------------|----------------------------------------------------------|------------|
| Toluene        | 108-88-3 | Toluene: 0.02 mg/l (In blood) | Prior to last shift of workweek                          | 2010-03-01 |
|                |          | Toluene: 0.03 mg/l (Urine)    | End of shift (As soon as possible after exposure ceases) | 2010-03-01 |

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|              |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                          |            |
|--------------|-----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|------------|
|              |           | o-Cresol: 0.3 mg/g creatinine Background (Urine) With hydrolyses ()                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | End of shift (As soon as possible after exposure ceases) | 2010-03-01 |
| Xylenes      | 1330-20-7 | Methylhippuric acids: 0.3 g/g creatinine 2024 Adoption (Urine)<br>Commercial or technical grade xylenes consist of mixtures of isomers and significant amounts of ethyl benzene as indicated under 'Properties.' Because ethyl benzene is known to reduce the metabolism of xylenes to methylhippuric acids, the BEI applies to technical or commercial grades of xylenes only. () The determinants refer to the total of all isomers of methylhippuric acids. () Adopted values or notations enclosed are those for which changes are proposed in the NIC () | End of shift (As soon as possible after exposure ceases) | 2024-01-01 |
| n-hexane     | 110-54-3  | 2,5-Hexanedione: 0.5 mg/l Without hydrolysis (Urine)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | End of shift                                             | 2020-02-01 |
| Ethylbenzene | 100-41-4  | Sum of mandelic acid and phenyl glyoxylic acid: 150 mg/g creatinine 2024 Adoption (Urine) Nonspecific ()                                                                                                                                                                                                                                                                                                                                                                                                                                                      | End of shift (As soon as possible after exposure ceases) | 2024-01-01 |
| Benzene      | 71-43-2   | S-Phenylmercapturic acid: 25 µg/g creatinine Background (Urine)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | End of shift (As soon as possible after exposure ceases) | 2010-03-01 |
|              |           | t,t-Muconic acid: 500 µg/g creatinine Background (Urine)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | End of shift (As soon as possible after exposure ceases) | 2010-03-01 |
| Cyclohexane  | 110-82-7  | 1,2-Cyclohexanediol: 50 mg/g creatinine Nonspecific (Urine)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | End of shift at end of workweek                          | 2023-01-01 |

**Engineering measures**

Adequate ventilation to control airborne concentrations below the exposure guidelines/limits. Consider the potential hazards of this material (see Section 2), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

**Personal protective equipment**

Respiratory protection : If ventilation or other engineering controls are not adequate to maintain minimal oxygen content of 19.5% by volume under normal atmospheric pressure, a supplied-air NIOSH approved respirator may be appropriate. If exposure to harmful levels of airborne material may occur, a NIOSH approved respirator that provides protection may be appropriate, such as: Air-Purifying Respirator for Organic Vapors. A positive pressure, air-supplying respirator may be appropriate if there is potential for uncontrolled release, aerosolization, exposure levels are not known, or other circumstances where air-purifying respirators may not provide adequate protection.

Hand protection : The suitability for a specific workplace should be discussed with the producers of the protective gloves. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the

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product is used, such as the danger of cuts, abrasion, and the contact time. Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.

- Eye protection : Eye wash bottle with pure water. Tightly fitting safety goggles.
- Skin and body protection : Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place. Wear as appropriate:. Flame retardant antistatic protective clothing. Workers should wear antistatic footwear.
- Hygiene measures : When using do not eat or drink. When using do not smoke. Wash hands before breaks and at the end of workday.

**SECTION 9: Physical and chemical properties****Information on basic physical and chemical properties****Appearance**

- Form : liquid
- Physical state : liquid
- Color : Yellow, pale
- Odor : Mild

**Safety data**

- Flash point : -37°C (-35°F)  
Method: PMCC
- Lower explosion limit : No data available
- Upper explosion limit : No data available
- Molecular formula : Mixture
- Molecular weight : Not applicable
- pH : Not applicable
- Pour point : No data available
- Boiling point/boiling range : 33.8-204°C (92.8-399°F)
- Vapor pressure : 9.00 PSI  
at 38°C (100°F)
- Relative density : 0.74  
at 16 °C (61 °F)
- Water solubility : negligible
- Partition coefficient: n-octanol/water : No data available
- Viscosity, kinematic : No data available
- Relative vapor density : 3.8  
(Air = 1.0)

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Evaporation rate : No data available

**SECTION 10: Stability and reactivity**

Reactivity : Stable under recommended storage conditions.

Chemical stability : This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

**Possibility of hazardous reactions**

Hazardous reactions : Hazardous reactions: Vapors may form explosive mixture with air.

Conditions to avoid : Heat, flames and sparks.

Materials to avoid : No data available.

Hazardous decomposition products : Carbon oxides

Other data : No decomposition if stored and applied as directed.

**SECTION 11: Toxicological information****UTG 96 (unleaded test gasoline)**Acute oral toxicity : Acute toxicity estimate: > 5,000 mg/kg  
Method: Calculation method**UTG 96 (unleaded test gasoline)**Acute inhalation toxicity : Acute toxicity estimate: > 40 mg/l  
Exposure time: 4 h  
Test atmosphere: vapor  
Method: Calculation methodAcute toxicity estimate: 23.81 mg/l  
Exposure time: 4 h  
Test atmosphere: vapor  
Method: Calculation method**UTG 96 (unleaded test gasoline)**Acute dermal toxicity : Acute toxicity estimate: 2,500 mg/kg  
Method: Calculation method**UTG 96 (unleaded test gasoline)**

Skin irritation : May cause skin irritation in susceptible persons.

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|                                                    |                                                                                                                         |
|----------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|
| <b>Eye irritation</b>                              | : Vapors may cause irritation to the eyes, respiratory system and the skin.                                             |
| <b>Sensitization</b>                               |                                                                                                                         |
| Naphtha, Petroleum, Heavy Catalytic Cracked        | : Not a skin sensitizer.                                                                                                |
| Naphtha (petroleum), light catalytic reformed      | Did not cause sensitization on laboratory animals.                                                                      |
| Hydrocarbons, C3-11, catalytic cracker distillates | Not a skin sensitizer.                                                                                                  |
| Naphtha (petroleum), light alkylate                | Did not cause sensitization on laboratory animals. Information given is based on data obtained from similar substances. |
| Toluene                                            | Did not cause sensitization on laboratory animals.                                                                      |
| Isopentane                                         | Did not cause sensitization on laboratory animals.                                                                      |
| 2,2,4-Trimethylpentane (Isooctane)                 | Did not cause sensitization on laboratory animals.                                                                      |
| Xylenes                                            | Classification: Contains no substance or substances classified as sensitizing.                                          |
| C9-C11 Isoalkanes                                  | Not a skin sensitizer. Information given is based on data obtained from similar substances.                             |
| Isoalkanes C7-8                                    | Did not cause sensitization on laboratory animals. Information given is based on data obtained from similar substances. |
| Cyclopentane                                       | Did not cause sensitization on laboratory animals. Information given is based on data obtained from similar substances. |
| n-Heptane                                          | Did not cause sensitization on laboratory animals. Information given is based on data obtained from similar substances. |
| n-hexane                                           | Did not cause sensitization on laboratory animals.                                                                      |
|                                                    | Does not cause skin sensitization.                                                                                      |
| 1-Hexene                                           | Did not cause sensitization on laboratory animals.                                                                      |
| Ethylbenzene                                       | Did not cause sensitization on laboratory animals.                                                                      |
| Naphthalene                                        | Classification: Did not cause sensitization on laboratory animals. Did not cause sensitization on laboratory animals.   |
| Benzene                                            | Did not cause sensitization on laboratory animals.                                                                      |
| Methylcyclopentane                                 | Did not cause sensitization on laboratory animals. Information given is based on data obtained from similar substances. |
| 2-methyl-2-butene                                  | Did not cause sensitization on laboratory animals.                                                                      |
| Cyclohexane                                        | Did not cause sensitization on laboratory animals.                                                                      |
| n-Pentane                                          | Did not cause sensitization on laboratory animals.                                                                      |

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Methylcyclohexane

Did not cause sensitization on laboratory animals.

**Repeated dose toxicity**Naphtha, Petroleum, Heavy  
Catalytic Cracked

: Species: Rat, male  
 Sex: male  
 Application Route: oral gavage  
 Dose: 0, 500, 2000 mg/kg  
 Exposure time: 28 d  
 Number of exposures: once daily, 5 d/wk  
 Lowest observable effect level: 500 mg/kg

Species: Rabbit, male and female  
 Sex: male and female  
 Application Route: Dermal  
 Dose: 200, 1000, 2000 mg/kg  
 Exposure time: 28 d  
 Number of exposures: 3 times/wk  
 NOEL: > 2,000 mg/kg  
 Method: OECD Test Guideline 410

Species: Rat, male and female  
 Sex: male and female  
 Application Route: Inhalation  
 Dose: 2000, 10000, 20000 mg/m<sup>3</sup>  
 Exposure time: 90 d  
 Number of exposures: 6h/d 5d/wk  
 NOEL: > 20000 mg/m<sup>3</sup>  
 Method: OECD Test Guideline 413

Naphtha (petroleum), light  
catalytic reformed

Species: Rat  
 Application Route: Inhalation  
 Dose: 0, 2.00, 5.85, 20.3 mg/l  
 Exposure time: 21 day  
 Number of exposures: 6 h/d, 5 d/wk  
 NOEL: 20.3 mg/l

Species: Rabbit  
 Application Route: Dermal  
 Dose: 0, 200, 1000, 2000 mg/l  
 Exposure time: 28 day  
 Number of exposures: 3 times/wk  
 Lowest observable effect level: 1000 mg/l

Naphtha (petroleum), light  
alkylate

Species: Rat, male  
 Sex: male  
 Application Route: oral gavage  
 Dose: 500, 2000 mg/kg  
 Exposure time: 4 wk  
 Number of exposures: once daily, 5 d/wk  
 Target Organs: Kidney  
 Information given is based on data obtained from similar substances.

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Species: Rabbit, male and female  
Sex: male and female  
Application Route: Dermal  
Dose: 0, 200, 1000, 2000 mg/kg  
Exposure time: 4 wk  
Number of exposures: 3 times/wk  
NOEL: 1,000 mg/kg  
Lowest observable effect level: 2,000 mg/kg  
Method: OECD Test Guideline 410  
Target Organs: Skin  
Information given is based on data obtained from similar substances.

Species: Rat, male and female  
Sex: male and female  
Application Route: Inhalation  
Dose: 322, 1402, 9869 mg/m<sup>3</sup>  
Exposure time: 107 - 109 wk  
Number of exposures: 6 h/d 5 d/wk  
NOEL: 1402 mg/m<sup>3</sup>  
Method: OECD Test Guideline 453  
Information given is based on data obtained from similar substances.

Species: Mouse, male and female  
Sex: male and female  
Application Route: Inhalation  
Dose: 322, 1402, 9869 mg/m<sup>3</sup>  
Exposure time: 107- 113 wk  
Number of exposures: 6 h/d 5 d/wk  
NOEL: 1402 mg/m<sup>3</sup>  
Method: OECD Test Guideline 453  
Information given is based on data obtained from similar substances.

**Toluene**

Species: Rat  
Application Route: Inhalation  
Dose: 0, 100, 625, 1250, 3000 ppm  
Exposure time: 15 wk  
Number of exposures: 6.5 h/d, 5 d/wk  
NOEL: 625 ppm

Species: Mouse  
Application Route: Inhalation  
Dose: 0, 100, 625, 1250, 3000 ppm  
Exposure time: 14 wk  
Number of exposures: 6.5 h/d, 5 d/wk  
NOEL: 100 ppm

**Isopentane**

Species: Rat, male and female  
Sex: male and female  
Application Route: Inhalation  
Dose: 668, 2220, 6646 ppm  
Exposure time: 13 wk  
Number of exposures: 6 h/d, 5 d/wk  
NOEL: > 2220 ppm  
Lowest observable effect level: > = 6646 ppm  
Method: OECD Guideline 413  
Target Organs: Kidney  
Information given is based on data obtained from similar

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|                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|---------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                       | substances.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| 2,2,4-Trimethylpentane<br>(Isooctane) | <p>Species: Rat, Male and female<br/> Sex: Male and female<br/> Application Route: Inhalation<br/> Dose: 0, 668, 2220, 6646 ppm<br/> Exposure time: 13 weeks<br/> Number of exposures: 6 hr/day 5 d/wk<br/> NOEL: 8.117 mg/l 2220 ppm<br/> Method: OECD Guideline 413<br/> Information given is based on data obtained from similar substances.</p>                                                                                                                                                                                                                                |
| Xylenes                               | <p>Species: Rat<br/> Application Route: oral gavage<br/> Dose: 0, 62.5, 125, 250, 500, 100...<br/> Exposure time: 13 wk<br/> Number of exposures: daily, 5 d/wk<br/> NOEL: 1,000 mg/kg</p> <p>Species: Rat<br/> Application Route: Inhalation<br/> Dose: 0, 180, 460, 810 ppm<br/> Exposure time: 13 wk<br/> Number of exposures: 6 h/d, 5 d/wk<br/> NOEL: &gt; 810 ppm</p> <p>Species: Rat<br/> Application Route: Inhalation<br/> Dose: 0, 450, 900, 1800 ppm<br/> Exposure time: 13 wk<br/> Number of exposures: 6 h/d, 6 d/wk<br/> Lowest observable effect level: 900 ppm</p> |
| C9-C11 Isoalkanes                     | <p>Species: Rat, male and female<br/> Sex: male and female<br/> Application Route: Inhalation<br/> Dose: 0, 2600, 5200, 10400 mg/3<br/> Exposure time: 13 wk<br/> Number of exposures: 6 h/d, 5 d/wk<br/> NOEL: &gt; 10,400 mg/m3<br/> Method: OECD Test Guideline 413<br/> No significant adverse effects were reported<br/> Information given is based on data obtained from similar substances.</p>                                                                                                                                                                             |
| Isoalkanes C7-8                       | <p>Species: Rat, male and female<br/> Sex: male and female<br/> Application Route: Inhalation<br/> Dose: 0, 400, 1200 ppm<br/> Exposure time: 12 wk<br/> Number of exposures: 6 hr/d, 5 d/wk<br/> NOEL: 1200 ppm<br/> Method: OECD Test Guideline 413<br/> Target Organs: Kidney<br/> Information given is based on data obtained from similar substances.</p>                                                                                                                                                                                                                     |
| Cyclopentane                          | <p>Species: Rat, males<br/> Sex: males</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| SDS Number:100000013939               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 17/63                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

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|           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|           | <p>Dose: 0, 0.22, 1.12, 5.29 mg/l<br/> Exposure time: 28 d<br/> Number of exposures: 6 h/d<br/> NOEL: 1.12 mg/l<br/> Lowest observable effect level: 5.29 mg/l<br/> Method: OECD Test Guideline 412</p> <p>Species: Rat, females<br/> Sex: females<br/> Dose: 0, 0.22, 1.12, 5.29 mg/l<br/> Exposure time: 28 d<br/> Number of exposures: 6 h/d<br/> NOEL: 5.29 mg/l<br/> Lowest observable effect level: &gt; 5.29 mg/l<br/> Method: OECD Test Guideline 412</p> <p>Species: Rat, male and female<br/> Sex: male and female<br/> Dose: 5, 10, 30 mg/l<br/> Exposure time: 90 d<br/> Number of exposures: 6 h/d<br/> NOEL: 30 mg/l<br/> Method: OECD Test Guideline 413<br/> No adverse effects expected</p> |
| n-Heptane | <p>Species: Rat, male<br/> Sex: male<br/> Application Route: Inhalation<br/> Dose: 12.47 mg/l<br/> Exposure time: 16 wk<br/> Number of exposures: 12 h/d, 7 d/wk<br/> NOEL: 12.47 mg/l<br/> No adverse effect has been observed in chronic toxicity tests.</p> <p>Species: Rat, Male and female<br/> Sex: Male and female<br/> Application Route: Inhalation<br/> Dose: 12.35 mg/l<br/> Exposure time: 26 wk<br/> Number of exposures: 6 h/d, 5 d/wk<br/> Method: OECD Test Guideline 413<br/> No adverse effect has been observed in chronic toxicity tests.</p>                                                                                                                                            |
| n-Butane  | <p>Species: Rat, Male and female<br/> Sex: Male and female<br/> Application Route: Inhalation<br/> Dose: 0, 1017, 4489 ppm<br/> Exposure time: 90 day<br/> Number of exposures: 6 hr/d, 5 d/wk<br/> NOEL: 4489 ppm</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| n-hexane  | <p>Species: Rat, male<br/> Sex: male<br/> Application Route: Inhalation<br/> Dose: 3,000 ppm<br/> Exposure time: 16 wks<br/> Number of exposures: 12 h/d<br/> Lowest observable effect level: 3,000 ppm<br/> Target Organs: Peripheral nervous system</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

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**1-Hexene**

Species: Mouse, female  
Sex: female  
Application Route: Inhalation  
Dose: 500, 1,000, 4,000, 10,000 ppm  
Exposure time: 13 wks  
Number of exposures: 6h or 22h (1,000 ppm)/ 5d/wk  
Lowest observable effect level: 500 ppm  
Target Organs: Nose

Species: Mouse, male  
Sex: male  
Application Route: Inhalation  
Dose: 500, 1,000, 4000, 10,000 ppm  
Exposure time: 13 wks  
Number of exposures: 6h or 22h (1,000 ppm)/d, 5d/wk  
NOEL: 500 ppm  
Lowest observable effect level: 1,000 ppm  
Target Organs: Nose

Species: Rat, male  
Sex: male  
Application Route: oral gavage  
Dose: 568, 1,135, 3,973 mg/kg bw/day  
Exposure time: 90 or 120 days  
Number of exposures: Daily or 5d/wk (120-d study)  
NOEL: 568 mg/kg bw/day  
Lowest observable effect level: 1135 mg/kg bw/day

Species: Rat, male  
Sex: male  
Application Route: oral gavage  
Dose: 0, 10, 101, 1010, 3365 mg/kg  
Exposure time: 28 day  
Number of exposures: daily  
NOEL: 101 mg/kg  
Lowest observable effect level: 1,010 mg/kg  
Test substance: yes  
Method: OECD Test Guideline 407

Species: Rat, female  
Sex: female  
Application Route: oral gavage  
Dose: 0, 10, 101, 1010, 3365 mg/kg  
Exposure time: 28 day  
Number of exposures: daily  
NOEL: 1,010 mg/kg  
Lowest observable effect level: 3,365 mg/kg  
Test substance: yes  
Method: OECD Test Guideline 407

Species: Rat  
Application Route: Inhalation  
Dose: 0, 300, 1000, 3000 ppm  
Exposure time: 90 day  
Number of exposures: 6 h/d, 5 d/wk, 13 wk  
NOEL: 3000 ppm  
Test substance: yes

**Ethylbenzene**

Species: Rat, male  
Sex: male

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**Benzene**

Application Route: Inhalation  
Dose: 200, 400, 600, 800 ppm  
Exposure time: 13 weeks  
Number of exposures: 6 hours/day, 6 days/week  
NOEL: 200 ppm  
Test substance: yes  
Target Organs: Ototoxicity

Species: Rat, female  
Sex: female  
Application Route: oral gavage  
Dose: 0, 25, 50, 100 mg/kg  
Exposure time: 103 wk  
Number of exposures: 5 d/wk  
NOEL: < 25 mg/kg  
Lowest observable effect level: 25 mg/kg

Species: Rat, male  
Sex: male  
Application Route: oral gavage  
Dose: 0, 50, 100, 200 mg/kg  
Exposure time: 103 wk  
Number of exposures: 5 d/wk  
NOEL: < 50 mg/kg  
Lowest observable effect level: 50 mg/kg

Species: Mouse  
Application Route: oral gavage  
Dose: 0, 25, 50, 100 mg/kg  
Exposure time: 103 wk  
NOEL: < 25 mg/kg

**2-methyl-2-butene**

Species: Rat, Male and female  
Sex: Male and female  
Application Route: Inhalation  
Dose: 580, 2000, 7000 ppm  
Exposure time: 4 wk  
Number of exposures: 6 h/d, 7 d/wk  
NOEL: 580 ppm  
Method: OECD Guideline 422

**Cyclohexane**

Species: Rat  
Application Route: Inhalation  
Dose: 0, 500, 2000, 7000 ppm  
Exposure time: 90 day  
Number of exposures: 6 h/d, 5 d/wk  
NOEL: 2000 ppm

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|                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|--------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                    | <p>Species: Rat, Male and female<br/> Sex: Male and female<br/> Application Route: Inhalation<br/> Dose: 0, 500, 2,000, 7000 ppm<br/> Exposure time: 13-14 wk<br/> Number of exposures: 6 hr/d, 5 d/wk<br/> NOEL: 7000 ppm</p> <p>Species: Mouse, Male and female<br/> Sex: Male and female<br/> Application Route: Inhalation<br/> Dose: 0, 500, 2000, 7000 ppm<br/> Exposure time: 13-14 wk<br/> Number of exposures: 6 hr/d, 5 d/wk<br/> NOEL: 2000 ppm<br/> Target Organs: Blood</p>                                                                                     |
| 2,3-Dimethylbutane | <p>Species: Rat<br/> Application Route: oral gavage<br/> Dose: 0, 500, 2000 mg/kg<br/> Exposure time: 4 wk<br/> Number of exposures: once a day, 5 d/wk<br/> Lowest observable effect level: 500 mg/kg<br/> Target Organs: Kidney</p>                                                                                                                                                                                                                                                                                                                                        |
| n-Pentane          | <p>Species: Rat, Male and female<br/> Sex: Male and female<br/> Application Route: inhalation (gas)<br/> Dose: 0, 5000, 10,000, 20,000 mg/m3<br/> Exposure time: 13 wk<br/> Number of exposures: 6 h/d, 5 d/wk<br/> NOEL: 20,000 mg/m3<br/> Method: OECD Test Guideline 413</p>                                                                                                                                                                                                                                                                                              |
| Methylcyclohexane  | <p>Species: Rat, male<br/> Sex: male<br/> Application Route: oral gavage<br/> Dose: 62.5, 250, 1000 mg/kg<br/> Exposure time: 28 d<br/> Number of exposures: daily, 7d/wk<br/> NOEL: 250 mg/kg<br/> Lowest observable effect level: 1,000 mg/kg<br/> Method: OECD Guideline 422</p> <p>Species: Rat, female<br/> Sex: female<br/> Application Route: oral gavage<br/> Dose: 62.5, 250, 1000 mg/kg<br/> Exposure time: 46 d<br/> Number of exposures: daily, 7 d/wk<br/> NOEL: 250 mg/kg<br/> Lowest observable effect level: 1,000 mg/kg<br/> Method: OECD Guideline 422</p> |
| Isoprene           | <p>Species: Rat<br/> Application Route: Inhalation<br/> Dose: 0. 70, 220, 700, 2200, 7000...<br/> Exposure time: 13 wk<br/> Number of exposures: 6 h/d, 5 d/wk<br/> NOEL: 7000 ppm</p>                                                                                                                                                                                                                                                                                                                                                                                       |

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Species: Mouse  
Application Route: Inhalation  
Dose: 0, 70, 220, 700, 2200, 7000...  
Exposure time: 13 wk  
Number of exposures: 6 h/d, 5 d/wk  
Lowest observable effect level: 70 ppm

**Genotoxicity in vitro**

Naphtha, Petroleum, Heavy  
Catalytic Cracked

: Test Type: Mouse lymphoma assay  
Result: positive

Naphtha (petroleum), light  
catalytic reformed

Test Type: Ames test  
Result: negative

Test Type: Cytogenetic assay  
Result: negative

Hydrocarbons, C3-11,  
catalytic cracker distillates

Result: May cause genetic defects.  
Remarks: In vitro tests showed mutagenic effects

Naphtha (petroleum), light  
alkylate

Test Type: Mouse lymphoma assay  
Metabolic activation: with and without metabolic activation  
Method: OECD Test Guideline 476  
Result: negative  
Remarks: Information given is based on data obtained from similar substances.

Test Type: Sister chromatid exchange  
Metabolic activation: with and without metabolic activation  
Method: OECD Test Guideline 479  
Result: negative  
Remarks: Information given is based on data obtained from similar substances.

Test Type: Ames test  
Metabolic activation: with and without metabolic activation  
Method: OECD Test Guideline 471  
Result: negative  
Remarks: Information given is based on data obtained from similar substances.

Toluene

Test Type: Ames test  
Result: negative

Test Type: Sister Chromatid Exchange Assay  
Result: negative

Test Type: Mouse lymphoma assay  
Result: negative

Test Type: Cytogenetic assay  
Result: negative

Isopentane

Test Type: Ames test  
Concentration: 1, 2, 5, 8, 10%  
Metabolic activation: with and without metabolic activation  
Method: OECD Test Guideline 471

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Result: negative

Test Type: Ames test

Concentration: 1, 2, 5, 8, 10, 25, 50%

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 471

Result: negative

Remarks: Information given is based on data obtained from similar substances.

Test Type: Chromosome aberration test in vitro

Metabolic activation: with and without metabolic activation

Method: Mutagenicity (in vitro mammalian cytogenetic test)

Result: negative

Remarks: Information given is based on data obtained from similar substances.

Test Type: In vitro mammalian cell gene mutation test

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 476

Result: negative

Remarks: Information given is based on data obtained from similar substances.

2,2,4-Trimethylpentane  
(Isooctane)

Test Type: Ames test

Method: Mutagenicity (Escherichia coli - reverse mutation assay)

Result: negative

Test Type: Mouse lymphoma assay

Method: OECD Guideline 476

Result: negative

Test Type: Sister Chromatid Exchange Assay

Result: negative

Test Type: Unscheduled DNA synthesis assay

Result: negative

Xylenes

Test Type: Ames test

Result: negative

Test Type: Mouse lymphoma assay

Result: negative

C9-C11 Isoalkanes

Test Type: E. Coli bacterial reverse mutation assay

Result: negative

Remarks: Information given is based on data obtained from similar substances.

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|                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                 | <p>Test Type: Ames test<br/>Metabolic activation: with and without metabolic activation<br/>Result: negative<br/>Remarks: Information given is based on data obtained from similar substances.</p> <p>Test Type: Bacterial DNA repair test<br/>Result: negative<br/>Remarks: Information given is based on data obtained from similar substances.</p>                                                                                                                                                                              |
| Isoalkanes C7-8 | <p>Test Type: Ames test<br/>Result: negative</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Cyclopentane    | <p>Test Type: Modified Ames test<br/>Concentration: 1250 microgram/plate<br/>Metabolic activation: with and without metabolic activation<br/>Result: negative</p> <p>Test Type: Mouse lymphoma assay<br/>Concentration: 200 microgram/mililiter<br/>Metabolic activation: with and without metabolic activation<br/>Result: negative</p>                                                                                                                                                                                           |
| n-Heptane       | <p>Test Type: Ames test<br/>Method: Mutagenicity (Escherichia coli - reverse mutation assay)<br/>Result: negative</p> <p>Test Type: Mammalian cell gene mutation assay<br/>Method: OECD Guideline 476<br/>Result: negative</p> <p>Test Type: Chromosome aberration test in vitro<br/>Method: OECD Guideline 473<br/>Result: negative</p> <p>Test Type: Mitotic recombination<br/>Result: negative</p>                                                                                                                              |
| n-Butane        | <p>Test Type: Ames test<br/>Result: negative</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| n-hexane        | <p>Test Type: Ames test<br/>Metabolic activation: with and without metabolic activation<br/>Method: OECD Test Guideline 471<br/>Result: negative</p> <p>Test Type: Mouse lymphoma assay<br/>Metabolic activation: with and without metabolic activation<br/>Method: OECD Test Guideline 476<br/>Result: negative</p> <p>Test Type: Mouse lymphoma assay<br/>Metabolic activation: with and without metabolic activation<br/>Method: OECD Test Guideline 476<br/>Result: Positive results were obtained in some in vitro tests.</p> |
| 1-Hexene        | <p>Test Type: Ames test<br/>Metabolic activation: with and without metabolic activation</p>                                                                                                                                                                                                                                                                                                                                                                                                                                        |

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|                    |                                                                                                                                                                             |
|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                    | Method: Mutagenicity (Escherichia coli - reverse mutation assay)<br>Result: negative                                                                                        |
|                    | Test Type: Unscheduled DNA synthesis assay<br>Result: negative                                                                                                              |
|                    | Test Type: Mouse lymphoma assay<br>Result: negative                                                                                                                         |
|                    | Test Type: Chromosome aberration test in vitro<br>Method: OECD Guideline 473<br>Result: negative                                                                            |
| Ethylbenzene       | Test Type: Ames test<br>Result: negative                                                                                                                                    |
|                    | Test Type: Unscheduled DNA synthesis assay<br>Result: negative                                                                                                              |
| 2,2-Dimethylbutane | Test Type: Ames test<br>Result: negative                                                                                                                                    |
| Naphthalene        | Test Type: Ames test<br>Result: negative                                                                                                                                    |
|                    | Test Type: Sister Chromatid Exchange Assay<br>Result: negative                                                                                                              |
|                    | Test Type: Unscheduled DNA synthesis assay<br>Result: negative                                                                                                              |
| Benzene            | Test Type: Ames test<br>Result: negative                                                                                                                                    |
|                    | Test Type: Cytogenetic assay<br>Result: positive                                                                                                                            |
|                    | Test Type: Mouse lymphoma assay<br>Result: positive                                                                                                                         |
|                    | Test Type: Sister Chromatid Exchange Assay<br>Result: negative                                                                                                              |
| 2-methyl-2-butene  | Test Type: Ames test<br>Metabolic activation: with and without metabolic activation<br>Method: OECD Test Guideline 471<br>Result: negative                                  |
|                    | Method: OECD Test Guideline 480<br>Result: negative                                                                                                                         |
| Cyclohexane        | Test Type: Ames test<br>Metabolic activation: with and without metabolic activation<br>Method: Mutagenicity (Escherichia coli - reverse mutation assay)<br>Result: negative |

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|                                                                                           |                                                                                                                                                                                                                                                                                                                                       |
|-------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                           | <p>Test Type: Mouse lymphoma assay<br/>Metabolic activation: with and without metabolic activation<br/>Result: negative</p> <p>Test Type: Mouse lymphoma assay<br/>Metabolic activation: with and without metabolic activation<br/>Method: OECD Guideline 476<br/>Result: negative</p>                                                |
| 2,3-Dimethylbutane                                                                        | <p>Test Type: Ames test<br/>Result: negative</p>                                                                                                                                                                                                                                                                                      |
| n-Pentane                                                                                 | <p>Test Type: Ames test<br/>Metabolic activation: with and without metabolic activation<br/>Result: negative</p>                                                                                                                                                                                                                      |
|                                                                                           | <p>Test Type: Chromosome aberration test in vitro<br/>Metabolic activation: with and without metabolic activation<br/>Result: Ambiguous</p>                                                                                                                                                                                           |
| Isoprene                                                                                  | <p>Test Type: Ames test<br/>Result: negative</p> <p>Test Type: Sister Chromatid Exchange Assay<br/>Result: positive</p>                                                                                                                                                                                                               |
| <b>Genotoxicity in vivo</b>                                                               |                                                                                                                                                                                                                                                                                                                                       |
| Naphtha (petroleum), light catalytic reformed                                             | <p>: Test Type: Cytogenetic assay<br/>Result: negative</p>                                                                                                                                                                                                                                                                            |
| Hydrocarbons, C3-11, catalytic cracker distillates<br>Naphtha (petroleum), light alkylate | <p>Result: May cause genetic defects.</p> <p>Test Type: In vivo micronucleus test<br/>Species: Rat<br/>Cell type: Bone marrow<br/>Dose: 2000, 10,000, 20,000 mg/m3<br/>Method: OECD Test Guideline 475<br/>Result: negative<br/>Remarks: Information given is based on data obtained from similar substances.</p>                     |
| Toluene                                                                                   | <p>Test Type: Cytogenetic assay<br/>Result: negative</p> <p>Test Type: Mouse micronucleus assay<br/>Result: negative</p>                                                                                                                                                                                                              |
| Isopentane                                                                                | <p>Test Type: In vivo micronucleus test<br/>Species: Rat<br/>Cell type: Bone marrow<br/>Route of Application: inhalation (vapor)<br/>Exposure time: 13 wk<br/>Dose: 5000, 10,000, 20,000 mg/m3<br/>Method: Directive 67/548/EEC, Annex V, B.12.<br/>Remarks: Information given is based on data obtained from similar substances.</p> |
| 2,2,4-Trimethylpentane                                                                    | <p>Test Type: Unscheduled DNA synthesis assay</p>                                                                                                                                                                                                                                                                                     |

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|                   |                                                                                                                                                                                                                                                                                       |
|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| (Isooctane)       | Species: Mouse<br>Dose: 500 mg/kg<br>Result: negative<br><br>Test Type: Unscheduled DNA synthesis assay<br>Species: Rat<br>Dose: 500 mg/kg<br>Result: negative                                                                                                                        |
| Xylenes           | Test Type: Mouse micronucleus assay<br>Result: negative                                                                                                                                                                                                                               |
| C9-C11 Isoalkanes | Test Type: Dominant lethal assay<br>Result: negative<br>Remarks: Information given is based on data obtained from similar substances.<br><br>Test Type: Mouse micronucleus assay<br>Result: negative<br>Remarks: Information given is based on data obtained from similar substances. |
| Cyclopentane      | Test Type: Micronucleus test<br>Species: Mouse<br>Route of Application: inhalation (vapor)<br>Dose: 10,000 ppm<br>Result: negative                                                                                                                                                    |
| n-hexane          | Test Type: Dominant lethal assay<br>Species: Mouse<br>Dose: 100 and 400 ppm<br>Result: negative<br><br>Test Type: Cytogenetic assay<br>Species: Rat<br>Dose: 900, 3000, 9000 ppm<br>Result: negative                                                                                  |
| 1-Hexene          | Test Type: Mouse micronucleus assay<br>Species: Mouse<br>Method: Mutagenicity (micronucleus test)<br>Result: negative                                                                                                                                                                 |
| Ethylbenzene      | Test Type: Mouse micronucleus assay<br>Species: Mouse<br>Result: negative                                                                                                                                                                                                             |
| Naphthalene       | Test Type: Mouse micronucleus assay<br>Result: negative                                                                                                                                                                                                                               |
| Benzene           | Test Type: Mouse micronucleus assay<br>Result: positive                                                                                                                                                                                                                               |
| 2-methyl-2-butene | Test Type: Mouse micronucleus assay<br>Species: Rat<br>Cell type: Bone marrow<br>Route of Application: Inhalation<br>Exposure time: 6 h/d 2d<br>Method: OECD Test Guideline 474<br>Result: positive                                                                                   |

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Cyclohexane

Test Type: Cytogenetic assay  
 Species: Rat  
 Cell type: Bone marrow  
 Dose: 96.6, 307.2, 10141.6 ppm  
 Result: negative

n-Pentane

Test Type: Micronucleus test  
 Species: Rat  
 Cell type: Bone marrow  
 Result: negative

Isoprene

Result: negative

Test Type: Micronucleus test  
 Result: positive

**Carcinogenicity**Naphtha, Petroleum, Heavy  
Catalytic Cracked

: Species: Mouse  
 Sex: male  
 Dose: 0, 0.05 ml  
 Exposure time: 2 yrs  
 Number of exposures: 3 times/wk  
 Print Date: OECD Test Guideline 451  
 Remarks: no increase incidence of tumors

Hydrocarbons, C3-11,  
catalytic cracker distillates

Species: Rat  
 Exposure time: 2 years  
 Print Date: OECD Test Guideline 451

Toluene

Species: Rat  
 Dose: 0, 600, 1200 ppm  
 Exposure time: 2 yrs  
 Number of exposures: 6.5 h/d, 5 d/wk  
 Remarks: No evidence of carcinogenicity

Species: Mouse  
 Dose: 0, 600, 1200 ppm  
 Exposure time: 2 yrs  
 Number of exposures: 6.5 h/d, 5 d/wk  
 Remarks: No evidence of carcinogenicity

Xylenes

Species: Rat  
 Dose: 0, 250, 500 mg/kg  
 Exposure time: 103 wks  
 Number of exposures: 5 d/wk  
 Remarks: No evidence of carcinogenicity

Species: Mouse  
 Dose: 0, 500, 1000 mg/kg  
 Exposure time: 103 wks  
 Number of exposures: 5 d/wk  
 Remarks: No evidence of carcinogenicity

n-hexane

Species: Rat  
 Dose: 0.043, 900, 3,000, 9,016 ppm  
 Exposure time: 2 yrs  
 Number of exposures: 6 h/d, 5 d/wk

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**Naphthalene**

Remarks: No evidence of carcinogenicity, Information given is based on data obtained from similar substances.

Species: Mouse

Sex: male and female

Dose: 0.039, 900, 3,000, 9,018 ppm

Exposure time: 2 yrs

Number of exposures: 6 h/d, 5 d/wk

Remarks: No evidence of carcinogenicity, Information given is based on data obtained from similar substances.

Species: Mouse

Sex: male

Dose: 10, 30 ppm

Exposure time: 105 weeks

Number of exposures: 6 hours/day, 5 days/week

Test substance: yes

Print Date: No information available.

Remarks: No evidence of carcinogenicity

Species: Mouse

Sex: female

Dose: 10, 30 ppm

Exposure time: 105 weeks

Number of exposures: 6 hours/day, 5 days/week

Test substance: yes

Print Date: No information available.

Remarks: increased incidence of alveolar/bronchiolar adenomas

Species: Rat

Sex: male and female

Dose: 10, 30, 60 ppm

Exposure time: 105 weeks

Number of exposures: 6 hours/day, 5 days/week

Test substance: yes

Print Date: No information available.

Remarks: nose respiratory epithelial adenoma, increased incidence of olfactory neuroblastomas

**Benzene**

Species: Rat

Sex: female

Dose: 0, 25, 50, 250 mg/kg

Exposure time: 103 wks

Number of exposures: daily, 5 days/week

Test substance: yes

Remarks: zymbal gland carcinomas, squamous cell papillomas

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|                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|----------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                    | <p>Species: Rat<br/>Sex: male<br/>Dose: 0, 50, 100, 200 mg/kg<br/>Exposure time: 103 wks<br/>Number of exposures: daily, 5 days/week<br/>Test substance: yes<br/>Remarks: zymbal gland carcinomas, squamous cell papillomas</p> <p>Species: Mouse<br/>Sex: male and female<br/>Dose: 25, 50, 100 mg/kg<br/>Exposure time: 103 wks<br/>Number of exposures: daily, 5 days/week<br/>Test substance: yes<br/>Remarks: Clear evidence of multiple organ carcinogenicity.</p> |
| Isoprene                                           | <p>Species: Rat<br/>Dose: 0, 70, 220, 700, 220, 7000 ppm<br/>Exposure time: 26 wks<br/>Number of exposures: 6 h/d, 5 d/wk<br/>Remarks: interstitial cell hyperplasia of testis at 7000 ppm</p> <p>Species: Mouse<br/>Dose: 0, 70, 220, 700, 220, 7000 ppm<br/>Exposure time: 26 wks<br/>Number of exposures: 6 h/d, 5 d/wk<br/>Remarks: malignant neoplastic lesions in the liver, lung, fore stomach and Harderian gland at 700 ppm</p>                                 |
| <b>Reproductive toxicity</b>                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Hydrocarbons, C3-11, catalytic cracker distillates | <p>: Species: Rat<br/>Sex: male and female<br/>Application Route: inhalation (vapor)<br/>Dose: 0, 5000, 10000, 20000 mg/m3<br/>Method: OECD Test Guideline 416<br/>NOAEL Parent: &gt; 20,000 mg/m3<br/>NOAEL F1: &gt; 20,000 mg/m3</p>                                                                                                                                                                                                                                   |
| Naphtha (petroleum), light alkylate                | <p>Species: Rat<br/>Sex: male and female<br/>Application Route: Inhalation<br/>Dose: 5,000, 10,000, 20,000 mg/L<br/>Number of exposures: 6 h/d, 7 d/wk<br/>Method: OECD Test Guideline 416<br/>NOAEL Parent: 24.7 mg/l<br/>NOAEL F1: 24.7 mg/l<br/>No adverse effects expected<br/>Information given is based on data obtained from similar substances.</p>                                                                                                              |
| Toluene                                            | <p>Species: Rat<br/>Application Route: Inhalation<br/>Dose: 0, 100, 500, 2000 ppm<br/>Test period: 95 d<br/>NOAEL Parent: 2000 ppm</p>                                                                                                                                                                                                                                                                                                                                   |
| Isopentane                                         | <p>Species: Rat</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

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|---------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                       | <p>Sex: male and female<br/> Application Route: inhalation (vapor)<br/> Dose: 0, 500, 2000, 7000 ppm<br/> Number of exposures: 6 h/d 5 d/wk<br/> Method: OECD Test Guideline 416<br/> NOAEL Parent: 7000 ppm<br/> NOAEL F1: 2000 ppm<br/> NOAEL F2: 2000 ppm<br/> Information given is based on data obtained from similar substances.<br/> Reduced fetal weight.</p>                                                                                                |
| 2,2,4-Trimethylpentane<br>(Isooctane) | <p>Species: Rat<br/> Sex: male and female<br/> Application Route: Inhalation<br/> Dose: 0, 900, 3000, 9000 ppm<br/> Number of exposures: 6 h/d 5 d/wk<br/> Method: OECD Test Guideline 416<br/> NOAEL Parent: 3000 ppm<br/> NOAEL F1: 3000 ppm<br/> NOAEL F2: 3000 ppm<br/> Information given is based on data obtained from similar substances.</p>                                                                                                                 |
| Isoalkanes C7-8                       | <p>Species: Rat<br/> Sex: male and female<br/> Application Route: inhalation (vapor)<br/> Number of exposures: 6 hr/d; 5 d/wk<br/> Method: OECD Test Guideline 416<br/> NOAEL Parent: 10,560 mg/m<sup>3</sup><br/> NOAEL F1: 31,680 mg/m<sup>3</sup><br/> NOAEL F2: 31,680 mg/m<sup>3</sup><br/> Fertility and developmental toxicity tests did not reveal any effect on reproduction.<br/> Information given is based on data obtained from similar substances.</p> |
| Cyclopentane                          | <p>Species: Rat<br/> Sex: males<br/> Application Route: Inhalation<br/> Dose: 0, 500, 2000, 7000 ppm<br/> Number of exposures: 6 h/day<br/> NOAEL Parent: 2000 ppm<br/> NOAEL F1: 2000 ppm<br/> NOAEL F2: 2000 ppm<br/> Reduced fetal weight.<br/> Information given is based on data obtained from similar substances.</p>                                                                                                                                          |
| n-Heptane                             | <p>Species: Rat<br/> Sex: male and female<br/> Application Route: Inhalation<br/> Dose: 0, 900, 3000, 9000 ppm<br/> Number of exposures: 6 hr/d, 5 d/wk<br/> Test period: 13 wk<br/> Method: OECD Test Guideline 416<br/> NOAEL Parent: 3000ppm<br/> NOAEL F1: 3000 ppm<br/> NOAEL F2: 3000 ppm<br/> Information given is based on data obtained from similar</p>                                                                                                    |

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substances.

n-hexane

Species: Rat  
Sex: male  
Application Route: Inhalation  
Dose: 5,000 ppm  
Number of exposures: 16 hr/d, 6 d/wk  
Test period: 6 wks  
permanent testicular damage characterized by loss of germ-cell line

1-Hexene

Species: Rat  
Sex: males  
Application Route: oral gavage  
Dose: 0, 100, 500, 1000 mg/kg  
Number of exposures: daily  
Test period: 44 d  
Test substance: yes  
Method: OECD Guideline 421  
NOAEL Parent: 1,000 mg/kg  
NOAEL F1: 1,000 mg/kg

Species: Rat  
Sex: females  
Application Route: oral gavage  
Dose: 0, 100, 500, 1000 mg/kg  
Number of exposures: daily  
Test period: 41-51 d  
Test substance: yes  
Method: OECD Guideline 421  
NOAEL Parent: 1,000 mg/kg  
NOAEL F1: 1,000 mg/kg

2-methyl-2-butene

Species: Rat  
Sex: male and female  
Application Route: Inhalation  
Dose: 580, 2000, 7000 ppm  
Number of exposures: 6 h/d, 7 d/wk  
Test period: 4 wks  
Method: OECD Guideline 422  
NOAEL Parent: 7000 ppm  
NOAEL F1: 7000 ppm  
no abnormalities observed

Cyclohexane

Species: Rat  
Application Route: Inhalation  
Dose: 0, 500, 2000, 7000 ppm  
Number of exposures: 6 hr/d, 5 d/wk  
Method: OECD Test Guideline 416  
NOAEL Parent: 500 ppm  
NOAEL F1: 7000 ppm  
NOAEL F2: 7000 ppm

n-Pentane

Species: Rat  
Sex: male  
Application Route: Inhalation  
Dose: 0, 5, 10, 20 mg/l  
Exposure time: 13 wk  
Test period: 6hrs/day, 5 days/wk  
NOAEL Parent: 20 mg/l

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no abnormalities observed

Species: Rat  
Sex: female  
Application Route: Inhalation  
Dose: 0, 5, 10, 20 mg/l  
Exposure time: 13 wk  
Test period: 6hrs/day, 5days/wk  
NOAEL Parent: 20 mg/l  
no abnormalities observed

**Methylcyclohexane**

Species: Rat  
Sex: male  
Application Route: oral gavage  
Dose: 62.5, 250, 1000 mg/kg  
Number of exposures: daily, 7 d/wk  
Test period: 28  
Method: OECD Guideline 422  
NOAEL Parent: 1,000 mg/kg  
NOAEL F1: 1,000 mg/kg

Species: Rat  
Sex: female  
Application Route: oral gavage  
Dose: 62.5, 250, 1000 mg/kg  
Number of exposures: daily, 7 d/wk  
Test period: 46  
Method: OECD Guideline 422  
NOAEL Parent: 1,000 mg/kg  
NOAEL F1: 1,000 mg/kg

Species: Rat  
Sex: male and female  
Application Route: inhalation (vapor)  
Dose: 500, 2000, 7000 ppm  
Number of exposures: daily, 7 d/wk  
Test period: 28  
Method: OECD Test Guideline 416  
NOAEL Parent: 500 ppm  
NOAEL F1: 500 ppm  
NOAEL F2: 2000 ppm  
Information given is based on data obtained from similar substances.

**Developmental Toxicity**

Hydrocarbons, C3-11,  
catalytic cracker distillates

: Species: Rat  
Exposure time: GD6-GD19  
Number of exposures: 6 h/d  
Test period: Day 20 of Gestation  
Method: OECD Guideline 414  
NOAEL Teratogenicity: 23900 mg/m3  
NOAEL Maternal: 23900 mg/m3

Naphtha (petroleum), light  
alkylate

Species: Rat  
Application Route: Dermal  
Dose: 30, 125, 500 mg/kg/d  
Exposure time: GD 0 - 19  
Number of exposures: Daily

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|                                       |                                                                                                                                                                                                                                                                                                                                    |
|---------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                       | <p>Test period: 19 d<br/>NOAEL Teratogenicity: 500 mg/kg<br/>NOAEL Maternal: 500 mg/kg<br/>Animal testing did not show any effects on fetal development.<br/>Information given is based on data obtained from similar substances.</p>                                                                                              |
| Toluene                               | <p>Species: Rat<br/>Application Route: Inhalation<br/>Dose: 0, 100, 500, 2000 ppm<br/>Test period: 95 d<br/>NOAEL Teratogenicity: 400-750 ppm</p>                                                                                                                                                                                  |
| Isopentane                            | <p>Species: Rat<br/>Application Route: oral gavage<br/>Dose: 0, 100, 500, 1000 mg/kg/d<br/>Exposure time: GD 6-15<br/>Number of exposures: daily<br/>Method: OECD Guideline 414<br/>NOAEL Teratogenicity: 1,000 mg/kg<br/>NOAEL Maternal: 1,000 mg/kg<br/>Information given is based on data obtained from similar substances.</p> |
|                                       | <p>Species: Rat<br/>Application Route: Inhalation<br/>Dose: 0, 500, 2000, 7000 ppm<br/>Exposure time: GD 6-15<br/>Number of exposures: 5 d/wk<br/>Method: OECD Guideline 414<br/>NOAEL Teratogenicity: 7000 ppm<br/>NOAEL Maternal: 500 - 2000 ppm<br/>Information given is based on data obtained from similar substances.</p>    |
|                                       | <p>Species: Rabbit<br/>Application Route: Inhalation<br/>Dose: 0, 500, 2000, 7000 ppm<br/>Exposure time: GD 6-18<br/>Method: OECD Guideline 414<br/>NOAEL Teratogenicity: 7000 ppm<br/>NOAEL Maternal: 7000 ppm<br/>Information given is based on data obtained from similar substances.</p>                                       |
| 2,2,4-Trimethylpentane<br>(Isooctane) | <p>Species: Rat<br/>Application Route: Inhalation<br/>Dose: 0, 400, 1200 ppm<br/>Number of exposures: 6h/d<br/>Test period: GD6-15<br/>NOAEL Teratogenicity: 1200 ppm<br/>NOAEL Maternal: 1200 ppm<br/>Information given is based on data obtained from similar substances.</p>                                                    |

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|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                   | <p>Species: Rat<br/>Application Route: Inhalation<br/>Dose: 0, 900, 3000, 9000 ppm<br/>Number of exposures: 6h/d<br/>Test period: GD6-15<br/>Method: OECD Guideline 414<br/>NOAEL Teratogenicity: 9000 ppm<br/>NOAEL Maternal: 3000 ppm<br/>Information given is based on data obtained from similar substances.</p>                                                                               |
| Xylenes           | <p>Species: Rat<br/>Application Route: Inhalation<br/>Dose: 0, 805, 1610 ppm<br/>Number of exposures: 6 h/d<br/>Test period: GD 7-16<br/>NOAEL Maternal: 1610 ppm</p> <p>Species: Mouse<br/>Application Route: oral gavage<br/>Dose: 0, 780, 1960, 2619 mg/kg<br/>Number of exposures: 3 times/d<br/>Test period: GD 6-15<br/>NOAEL Teratogenicity: 780 mg/kg<br/>NOAEL Maternal: 780 mg/kg</p>    |
| C9-C11 Isoalkanes | <p>Species: Rat<br/>Application Route: Inhalation<br/>Dose: 0, 291, 817 ppm<br/>Number of exposures: 6 h/d<br/>Test period: GD 6-15<br/>NOAEL Teratogenicity: &gt; 817 ppm<br/>NOAEL Maternal: &gt; 817 ppm</p>                                                                                                                                                                                    |
| Isoalkanes C7-8   | <p>Species: Rat<br/>Application Route: Inhalation<br/>Dose: 500, 2000, 7000 ppm<br/>Exposure time: 6 hr/d<br/>Test period: GD 6-15<br/>Method: OECD Guideline 414<br/>NOAEL Teratogenicity: &gt; 21,000 mg/m3<br/>NOAEL Maternal: &gt; 21,000 mg/m3<br/>Animal testing did not show any effects on fetal development.<br/>Information given is based on data obtained from similar substances.</p> |
| Cyclopentane      | <p>Species: Rat<br/>Application Route: oral gavage<br/>Dose: 0, 100, 500, 1000 mg/kg<br/>Exposure time: GD 6 - 15<br/>Number of exposures: daily<br/>NOAEL Teratogenicity: 1,000 mg/kg<br/>NOAEL Maternal: 1,000 mg/kg<br/>Information given is based on data obtained from similar substances.</p>                                                                                                |
| n-Heptane         | <p>Species: Rat<br/>Application Route: Inhalation<br/>Dose: 0, 900, 3000, 9000 ppm<br/>Exposure time: GD6-15</p>                                                                                                                                                                                                                                                                                   |

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| n-hexane          | <p>Number of exposures: 6 hrs/d<br/>NOAEL Teratogenicity: 9000 ppm<br/>NOAEL Maternal: 3000 ppm</p> <p>Species: Rat<br/>Application Route: Inhalation<br/>Dose: 200, 1,000, 5,000 ppm<br/>Number of exposures: 20 hr/d, daily<br/>Test period: GD 6-20<br/>NOAEL Teratogenicity: 200 ppm<br/>NOAEL Maternal: 200 ppm</p>                                                                                                                                                                             |
| Naphthalene       | <p>Species: Mouse<br/>Application Route: Inhalation<br/>Dose: 200, 1,000, 5,000 ppm<br/>Number of exposures: 20 hr/d, daily<br/>Test period: GD 6-17<br/>NOAEL Maternal: 1,000 ppm</p> <p>Species: Rabbit<br/>Application Route: oral gavage<br/>Dose: 40, 200, 400 mg/kg<br/>Test period: 29 d, GD 6-18<br/>NOAEL Teratogenicity: 400 mg/kg</p>                                                                                                                                                     |
| 2-methyl-2-butene | <p>Species: Rat<br/>Application Route: Inhalation<br/>Dose: 500, 2000, 8000 ppm<br/>Exposure time: 6 h/d<br/>Test period: Days 5 -21<br/>Method: OECD Guideline 414<br/>NOAEL Teratogenicity: 8000 ppm<br/>NOAEL Maternal: 8000 ppm<br/>Information given is based on data obtained from similar substances.<br/>Animal testing did not show any effects on fetal development.</p>                                                                                                                   |
| Cyclohexane       | <p>Species: Rat<br/>Application Route: Inhalation<br/>Dose: 0, 500, 2,000, 7,000 PPM<br/>Number of exposures: 6 hr/d<br/>Test period: GD 6-15<br/>Method: OECD Guideline 414<br/>NOAEL Teratogenicity: 7,000 ppm<br/>NOAEL Maternal: 500 ppm</p> <p>Species: Rabbit<br/>Application Route: Inhalation<br/>Dose: 0, 500, 2,000, 7,000 PPM<br/>Number of exposures: 6 hr/d<br/>Test period: GD 6-18<br/>Method: OECD Guideline 414<br/>NOAEL Teratogenicity: 7,000 ppm<br/>NOAEL Maternal: 500 ppm</p> |
| n-Pentane         | <p>Species: Rat<br/>Application Route: Inhalation<br/>Dose: 0, 1000, 3000, 10000 ppm<br/>Number of exposures: 6 h/d<br/>Test period: GD 6-15</p>                                                                                                                                                                                                                                                                                                                                                     |

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**Methylcyclohexane**

NOAEL Teratogenicity: 10,000 ppm

Species: Rat

Application Route: Inhalation

Dose: 500, 2000, 7000 ppm

Number of exposures: 6 hr/d, 7 d/wk

Test period: GD 7 - 16

Method: OECD Guideline 414

NOAEL Teratogenicity: 7000 ppm

NOAEL Maternal: 500 ppm

Information given is based on data obtained from similar substances.

Species: Rabbit

Application Route: Inhalation

Dose: 500, 2000, 7000 ppm

Number of exposures: 6 hr/d, 7 d/wk

Test period: GD 6 - 18

Method: OECD Guideline 414

NOAEL Teratogenicity: 7000 ppm

NOAEL Maternal: 500 ppm

Information given is based on data obtained from similar substances.

**Aspiration toxicity**

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|                                                    |                                                 |
|----------------------------------------------------|-------------------------------------------------|
| Naphtha, Petroleum, Heavy Catalytic Cracked        | : May be fatal if swallowed and enters airways. |
| Naphtha (petroleum), light catalytic reformed      | May be fatal if swallowed and enters airways.   |
| Hydrocarbons, C3-11, catalytic cracker distillates | May be fatal if swallowed and enters airways.   |
| Naphtha (petroleum), light alkylate                | May be fatal if swallowed and enters airways.   |
| Toluene                                            | May be fatal if swallowed and enters airways.   |
| Isopentane                                         | May be fatal if swallowed and enters airways.   |
| 3,3-Dimethylpentane                                | May be fatal if swallowed and enters airways.   |
| 2,2,4-Trimethylpentane (Isooctane)                 | May be fatal if swallowed and enters airways.   |
| Xylenes                                            | May be fatal if swallowed and enters airways.   |
| C9-C11 Isoalkanes                                  | May be fatal if swallowed and enters airways.   |
| Isoalkanes C7-8                                    | May be fatal if swallowed and enters airways.   |
| Heptane, branched, cyclic and linear               | May be fatal if swallowed and enters airways.   |
| Cyclopentane                                       | May be fatal if swallowed and enters airways.   |
| n-Heptane                                          | May be fatal if swallowed and enters airways.   |
| n-hexane                                           | May be fatal if swallowed and enters airways.   |
| 1-Hexene                                           | May be fatal if swallowed and enters airways.   |
| Ethylbenzene                                       | May be fatal if swallowed and enters airways.   |
| 1,2,4-Trimethylbenzene                             | May be fatal if swallowed and enters airways.   |
| 2,2-Dimethylbutane                                 | May be fatal if swallowed and enters airways.   |
| 2-Methylpentane                                    | May be fatal if swallowed and enters airways.   |
| Benzene                                            | May be fatal if swallowed and enters airways.   |
| 3-Methylpentane                                    | May be fatal if swallowed and enters airways.   |
| 2-Methylhexane                                     | May be fatal if swallowed and enters airways.   |
| Methylcyclopentane                                 | May be fatal if swallowed and enters airways.   |
| 3-Methylhexane                                     | May be fatal if swallowed and enters airways.   |
| 2-methyl-2-butene                                  | May be fatal if swallowed and enters airways.   |
| Cyclohexane                                        | May be fatal if swallowed and enters airways.   |
| 2,3-Dimethylbutane                                 | May be fatal if swallowed and enters airways.   |
| 2,3-Dimethylpentane                                | May be fatal if swallowed and enters airways.   |
| 2,4-Dimethylpentane                                | May be fatal if swallowed and enters airways.   |
| n-Pentane                                          | May be fatal if swallowed and enters airways.   |
| Methylcyclohexane                                  | May be fatal if swallowed and enters airways.   |
| 2,3,4-Trimethylpentane                             | May be fatal if swallowed and enters airways.   |
| Isoprene                                           | May be fatal if swallowed and enters airways.   |

**CMR effects**

|                                                    |                                                                                                                                                                                                                                                       |
|----------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Naphtha, Petroleum, Heavy Catalytic Cracked        | : Carcinogenicity: Possible human carcinogen<br>Mutagenicity: In vivo tests showed mutagenic effects<br>Reproductive toxicity: Some evidence of adverse effects on sexual function and fertility, and/or on development, based on animal experiments. |
| Naphtha (petroleum), light catalytic reformed      | Carcinogenicity: Possible human carcinogen<br>Mutagenicity: In vivo tests showed mutagenic effects<br>Reproductive toxicity: Some evidence of adverse effects on sexual function and fertility, and/or on development, based on animal experiments.   |
| Hydrocarbons, C3-11, catalytic cracker distillates | Carcinogenicity: Human carcinogen.<br>Mutagenicity: In vivo tests showed mutagenic effects<br>Teratogenicity: Some evidence of adverse effects on sexual function and fertility, and/or on development, based on animal experiments.                  |

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|                                    |                                                                                                                                                                                                                                                                                                                                                                                                   |
|------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                    | Reproductive toxicity: Some evidence of adverse effects on sexual function and fertility, and/or on development, based on animal experiments.                                                                                                                                                                                                                                                     |
| Toluene                            | <p>Carcinogenicity: Not classifiable as a human carcinogen.</p> <p>Mutagenicity: Animal testing did not show any mutagenic effects.</p> <p>Teratogenicity: Some evidence of adverse effects on development, based on animal experiments.</p> <p>Reproductive toxicity: Some evidence of adverse effects on sexual function and fertility, and/or on development, based on animal experiments.</p> |
| Isopentane                         | <p>Carcinogenicity: Not available</p> <p>Mutagenicity: Tests on bacterial or mammalian cell cultures did not show mutagenic effects., In vivo tests did not show mutagenic effects</p> <p>Teratogenicity: Animal testing did not show any effects on fetal development.</p> <p>Reproductive toxicity: Animal testing did not show any effects on fertility.</p>                                   |
| 2,2,4-Trimethylpentane (Isooctane) | <p>Mutagenicity: Tests on bacterial or mammalian cell cultures did not show mutagenic effects.</p> <p>Teratogenicity: Animal testing did not show any effects on fetal development.</p> <p>Reproductive toxicity: Animal testing did not show any effects on fertility.</p>                                                                                                                       |
| Xylenes                            | <p>Carcinogenicity: Not classifiable as a human carcinogen.</p> <p>Mutagenicity: Did not show mutagenic effects in animal experiments.</p> <p>Teratogenicity: Damage to fetus not classifiable</p>                                                                                                                                                                                                |
| Isoalkanes C7-8                    | <p>Carcinogenicity: Not available</p> <p>Mutagenicity: In vitro tests did not show mutagenic effects</p> <p>Reproductive toxicity: No evidence of adverse effects on sexual function and fertility, or on development, based on animal experiments.</p>                                                                                                                                           |
| n-Heptane                          | <p>Mutagenicity: Tests on bacterial or mammalian cell cultures did not show mutagenic effects.</p> <p>Teratogenicity: Animal testing did not show any effects on fetal development.</p> <p>Reproductive toxicity: No toxicity to reproduction</p>                                                                                                                                                 |
| n-Butane                           | <p>Carcinogenicity: Weight of evidence does not support classification as a carcinogen</p> <p>Mutagenicity: Weight of evidence does not support classification as a germ cell mutagen.</p> <p>Teratogenicity: Not available</p> <p>Reproductive toxicity: Weight of evidence does not support classification for reproductive toxicity</p>                                                        |
| n-hexane                           | <p>Carcinogenicity: Not classifiable as a human carcinogen.</p> <p>Mutagenicity: Did not show mutagenic effects in animal experiments.</p> <p>Teratogenicity: Animal testing did not show any effects on fetal development.</p> <p>Reproductive toxicity: Some evidence of adverse effects on</p>                                                                                                 |

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|                   |                                                                                                                                                                                                                                                                                                                     |
|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                   | sexual function and fertility, and/or on development, based on animal experiments.                                                                                                                                                                                                                                  |
| 1-Hexene          | <p>Carcinogenicity: Not available</p> <p>Mutagenicity: Tests on bacterial or mammalian cell cultures did not show mutagenic effects.</p> <p>Teratogenicity: Animal testing did not show any effects on fetal development.</p> <p>Reproductive toxicity: Animal testing did not show any effects on fertility.</p>   |
| Ethylbenzene      | <p>Carcinogenicity: Weight of evidence does not support classification as a carcinogen</p> <p>Mutagenicity: In vivo tests did not show mutagenic effects</p> <p>Teratogenicity: Did not show teratogenic effects in animal experiments.</p> <p>Reproductive toxicity: No toxicity to reproduction</p>               |
| Naphthalene       | Carcinogenicity: Limited evidence of carcinogenicity in animal studies                                                                                                                                                                                                                                              |
| Benzene           | <p>Carcinogenicity: Human carcinogen.</p> <p>Mutagenicity: In vivo tests showed mutagenic effects</p> <p>Teratogenicity: Did not show teratogenic effects in animal experiments.</p> <p>Reproductive toxicity: Animal testing did not show any effects on fertility.</p>                                            |
| 2-methyl-2-butene | <p>Carcinogenicity: Limited evidence of carcinogenicity in animal studies</p> <p>Mutagenicity: In vitro tests showed mutagenic effects</p> <p>Teratogenicity: Animal testing did not show any effects on fetal development.</p> <p>Reproductive toxicity: Animal testing did not show any effects on fertility.</p> |
| Cyclohexane       | <p>Carcinogenicity: Weight of evidence does not support classification as a carcinogen</p> <p>Mutagenicity: Did not show mutagenic effects in animal experiments.</p> <p>Teratogenicity: Did not show teratogenic effects in animal experiments.</p> <p>Reproductive toxicity: No toxicity to reproduction</p>      |
| Methylcyclohexane | <p>Carcinogenicity: Not available</p> <p>Mutagenicity: Tests on bacterial or mammalian cell cultures did not show mutagenic effects.</p> <p>Teratogenicity: Animal testing did not show any effects on fetal development.</p> <p>Reproductive toxicity: Animal testing did not show any effects on fertility.</p>   |
| Isoprene          | <p>Carcinogenicity: Possible human carcinogen</p> <p>Mutagenicity: In vitro tests showed mutagenic effects</p>                                                                                                                                                                                                      |

**UTG 96 (unleaded test gasoline)****Further information**

: Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting. Concentrations substantially above the TLV value may cause narcotic effects. Solvents

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may degrease the skin.

**SECTION 12: Ecological information****Toxicity to fish**

|                                                    |                                                                                                                                                                                                                                         |
|----------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Naphtha, Petroleum, Heavy Catalytic Cracked        | : LL50: 10 mg/l<br>Exposure time: 96 h<br>Species: Oncorhynchus mykiss (rainbow trout)<br>semi-static test Method: OECD Test Guideline 203                                                                                              |
| Naphtha (petroleum), light catalytic reformed      | LL50: 8.2 mg/l<br>Exposure time: 96 h<br>Species: Pimephales promelas (fathead minnow)<br>semi-static test                                                                                                                              |
| Hydrocarbons, C3-11, catalytic cracker distillates | 1 - 100 mg/l<br>Toxic to fish.                                                                                                                                                                                                          |
| Naphtha (petroleum), light alkylate                | LL50: 8.2 mg/l<br>Exposure time: 96 h<br>Species: Pimephales promelas (fathead minnow)<br>semi-static test                                                                                                                              |
| Toluene                                            | LC50: 18 - 36 mg/l<br>Exposure time: 96 h<br>Species: Pimephales promelas (fathead minnow)                                                                                                                                              |
| Isopentane                                         | LC50: 4.26 mg/l<br>Exposure time: 96 h<br>Species: Oncorhynchus mykiss (rainbow trout)<br>semi-static test Method: OECD Test Guideline 203<br>Information given is based on data obtained from similar substances.                      |
|                                                    | LL50: 34.3 mg/l<br>Exposure time: 96 h<br>Species: Oncorhynchus mykiss (rainbow trout)<br>Method: QSAR modeled data<br>The value is given based on a SAR/AAR approach using OECD Toolbox, DEREK, VEGA QSAR models (CAESAR models), etc. |
| 2,2,4-Trimethylpentane (Isooctane)                 | LC50: 0.11 mg/l<br>Exposure time: 96 h<br>Species: Oncorhynchus mykiss (rainbow trout)<br>semi-static test Method: OECD Test Guideline 203<br>Information given is based on data obtained from similar substances.                      |
| Xylenes                                            | LC50: 8.2 mg/l<br>Exposure time: 96 h<br>Species: Salmo gairdneri (Rainbow trout)                                                                                                                                                       |
| C9-C11 Isoalkanes                                  | LL50: 3.6 mg/l<br>Exposure time: 96 h<br>Species: Oncorhynchus mykiss (rainbow trout)<br>semi-static test Method: OECD Test Guideline 203<br>Information given is based on data obtained from similar substances.                       |
| Isoalkanes C7-8                                    | LL50: 3 - 10 mg/l                                                                                                                                                                                                                       |

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|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                    | <p>Exposure time: 96 h<br/> Species: <i>Oncorhynchus mykiss</i> (rainbow trout)<br/> Method: OECD Test Guideline 203<br/> Information given is based on data obtained from similar substances.</p> |
| Cyclopentane       | <p>LL50: 29.3 mg/l<br/> Exposure time: 96 h<br/> Species: Fish<br/> Method: QSAR modeled data</p>                                                                                                  |
| n-Heptane          | <p>LL50: 5.738 mg/l<br/> Exposure time: 96 h<br/> Species: <i>Oncorhynchus mykiss</i> (rainbow trout)<br/> Method: QSAR modeled data</p>                                                           |
| n-hexane           | <p>LL50: 12.51 mg/l<br/> Exposure time: 96 h<br/> Species: <i>Oncorhynchus mykiss</i> (rainbow trout)<br/> Method: QSAR modeled data</p>                                                           |
| 1-Hexene           | <p>LC50: 5.6 mg/l<br/> Exposure time: 96 h<br/> Species: <i>Oncorhynchus mykiss</i> (rainbow trout)<br/> semi-static test Test substance: yes<br/> Method: OECD Test Guideline 203</p>             |
| Ethylbenzene       | <p>LC50: 4.3 mg/l<br/> Exposure time: 96 h<br/> Species: <i>Marone saxatilis</i> (striped bass)</p>                                                                                                |
| Naphthalene        | <p>LC50: 3.2 mg/l<br/> Exposure time: 96 h<br/> Species: <i>Pimephales promelas</i> (fathead minnow)</p>                                                                                           |
| Benzene            | <p>LC50: 5.3 mg/l<br/> Exposure time: 96 h<br/> Species: <i>Oncorhynchus mykiss</i> (rainbow trout)<br/> flow-through test Test substance: yes<br/> Method: OECD Test Guideline 203</p>            |
| 3-Methylpentane    | No data available                                                                                                                                                                                  |
| Methylcyclopentane | <p>LL50: 18.27 mg/l<br/> Exposure time: 96 h<br/> Species: Fish<br/> Method: QSAR</p>                                                                                                              |
| 2-methyl-2-butene  | <p>LC50: 4.99 mg/l<br/> Exposure time: 96 h<br/> Species: <i>Oncorhynchus mykiss</i> (rainbow trout)<br/> semi-static test Method: OECD Test Guideline 203</p>                                     |
| Cyclohexane        | <p>LC50: 4.53 mg/l<br/> Exposure time: 96 h<br/> Species: <i>Pimephales promelas</i> (fathead minnow)<br/> Method: OECD Test Guideline 203</p>                                                     |
| 2,3-Dimethylbutane | <p>LC50: 6.68 mg/l<br/> Exposure time: 96 h</p>                                                                                                                                                    |

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|                   |                                                                                                                                                                                                                                         |
|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                   | Species: Fish<br>Method: QSAR modeled data                                                                                                                                                                                              |
| n-Pentane         | LL50: 10.6 mg/l<br>Exposure time: 96 h<br>Species: Oncorhynchus mykiss (rainbow trout)<br>Method: QSAR modeled data<br>The value is given based on a SAR/AAR approach using OECD Toolbox, DEREK, VEGA QSAR models (CAESAR models), etc. |
| Methylcyclohexane | LC50: 2.07 mg/l<br>Exposure time: 96 h<br>Species: Fish<br>semi-static test                                                                                                                                                             |
| Isoprene          | LC50: 7.43 mg/l<br>Exposure time: 96 h<br>Species: Oncorhynchus mykiss (rainbow trout)<br>semi-static test Method: OECD Test Guideline 203                                                                                              |

**Toxicity to daphnia and other aquatic invertebrates**

|                                                    |                                                                                                                                                                                                                                |
|----------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Naphtha, Petroleum, Heavy Catalytic Cracked        | : EL50: 4.5 mg/l<br>Exposure time: 48 h<br>Species: Daphnia magna (Water flea)<br>static test Method: OECD Test Guideline 202                                                                                                  |
| Hydrocarbons, C3-11, catalytic cracker distillates | 1 - 100 mg/l<br>Toxic effects on fish and plankton                                                                                                                                                                             |
| Naphtha (petroleum), light alkylate                | EL50: 4.5 mg/l<br>Exposure time: 48 h<br>Species: Daphnia magna (Water flea)<br>static test Method: OECD Test Guideline 202                                                                                                    |
| Toluene                                            | EC50: 3.78 mg/l<br>Exposure time: 48 h<br>Species: Daphnia magna (Water flea)                                                                                                                                                  |
| Isopentane                                         | EC50: 2.3 mg/l<br>Exposure time: 48 h<br>Species: Daphnia magna (Water flea)<br>static test Method: OECD Test Guideline 202                                                                                                    |
|                                                    | EL50: 59.9 mg/l<br>Exposure time: 48 h<br>Species: Daphnia magna (Water flea)<br>Method: QSAR modeled data<br>The value is given based on a SAR/AAR approach using OECD Toolbox, DEREK, VEGA QSAR models (CAESAR models), etc. |
| 2,2,4-Trimethylpentane (Isooctane)                 | EC50: 0.4 mg/l<br>Exposure time: 48 h<br>Species: Daphnia magna (Water flea)<br>static test Information given is based on data obtained from similar substances.                                                               |
| C9-C11 Isoalkanes                                  | EL50: 22 - 46 mg/l                                                                                                                                                                                                             |

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|                 |                                                                                                                                                                                                                                            |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                 | <p>Exposure time: 48 h<br/> Species: Daphnia magna (Water flea)<br/> static test Method: OECD Test Guideline 202<br/> Information given is based on data obtained from similar substances.</p>                                             |
| Isoalkanes C7-8 | <p>EL50: 4.6 - 10 mg/l<br/> Exposure time: 48 h<br/> Species: Daphnia magna (Water flea)<br/> static test Method: OECD Test Guideline 202<br/> Information given is based on data obtained from similar substances.</p>                    |
| Cyclopentane    | <p>EC50: 2.3 mg/l<br/> Exposure time: 48 h<br/> Species: Daphnia magna (Water flea)<br/> Information given is based on data obtained from similar substances.</p>                                                                          |
| n-Heptane       | <p>EC50: 1.5 mg/l<br/> Exposure time: 48 h<br/> Species: Daphnia magna (Water flea)<br/> static test Toxic to aquatic organisms.</p>                                                                                                       |
|                 | <p>LC50: 0.1 mg/l<br/> Exposure time: 96 h<br/> Species: Mysidopsis bahia (mysid shrimp)<br/> semi-static test Very toxic to aquatic organisms.</p>                                                                                        |
| n-hexane        | <p>EL50: 21.85 mg/l<br/> Exposure time: 48 h<br/> Species: Daphnia magna (Water flea)<br/> Method: QSAR modeled data</p>                                                                                                                   |
| 1-Hexene        | <p>EC50: 4.4 mg/l<br/> Exposure time: 48 h<br/> Species: Daphnia magna (Water flea)<br/> static test Test substance: no<br/> Method: OECD Test Guideline 202<br/> Information given is based on data obtained from similar substances.</p> |
| Ethylbenzene    | <p>LC50: 2.6 mg/l<br/> Exposure time: 96 h<br/> Species: Mysidopsis bahia (mysid shrimp)</p>                                                                                                                                               |
|                 | <p>EC50: 2.2 mg/l<br/> Exposure time: 48 h<br/> Species: Daphnia magna (Water flea)<br/> Method: OECD Test Guideline 202</p>                                                                                                               |
| 2-Methylpentane | <p>3.649 mg/l<br/> Exposure time: 48 h<br/> Species: Daphnia<br/> Method: Value calculated using ECOSAR.</p>                                                                                                                               |
| Naphthalene     | <p>LC50: 2.16 mg/l<br/> Exposure time: 48 h<br/> Species: Daphnia magna (Water flea)</p>                                                                                                                                                   |

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|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Benzene            | EC50: 10 mg/l<br>Exposure time: 48 h<br>Species: Daphnia magna (Water flea)<br>static test Test substance: yes<br>Method: OECD Test Guideline 202                                                                              |
| 3-Methylpentane    | No data available                                                                                                                                                                                                              |
| Methylcyclopentane | LC50: 4.45 mg/l<br>Exposure time: 48 h<br>Species: Daphnia magna (Water flea)<br>Method: QSAR                                                                                                                                  |
| 2-methyl-2-butene  | EC50: 3.84 mg/l<br>Exposure time: 48 h<br>Species: Daphnia magna (Water flea)<br>static test Method: OECD Test Guideline 202                                                                                                   |
| Cyclohexane        | EC50: 0.9 mg/l<br>Exposure time: 48 h<br>Species: Daphnia magna (Water flea)<br>Method: OECD Test Guideline 202                                                                                                                |
| 2,3-Dimethylbutane | LC50: 4.21 mg/l<br>Exposure time: 48 h<br>Species: Daphnia<br>Method: QSAR modeled data<br>No data available                                                                                                                   |
| n-Pentane          | EL50: 18.5 mg/l<br>Exposure time: 48 h<br>Species: Daphnia magna (Water flea)<br>Method: QSAR modeled data<br>The value is given based on a SAR/AAR approach using OECD Toolbox, DEREK, VEGA QSAR models (CAESAR models), etc. |
| Methylcyclohexane  | EC50: 0.326 mg/l<br>Exposure time: 48 h<br>Species: Daphnia magna (Water flea)<br>semi-static test                                                                                                                             |
| Hydrogen Sulfide   | EC50: 0.12 mg/l<br>Exposure time: 48 h<br>Species: Daphnia magna (Water flea)<br>static test Analytical monitoring: yes<br>Test substance: yes<br>Method: OECD Test Guideline 202                                              |
| Isoprene           | EC50: 5.77 mg/l<br>Exposure time: 48 h<br>Species: Daphnia magna (Water flea)                                                                                                                                                  |

**Toxicity to algae**

|                                             |                                                                                                                                             |
|---------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| Naphtha, Petroleum, Heavy Catalytic Cracked | : ErL50: 3.1 mg/l<br>Exposure time: 96 h<br>Species: Selenastrum capricornutum (green algae)<br>static test Method: OECD Test Guideline 201 |
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| Hydrocarbons, C3-11,<br>catalytic cracker distillates | 1 - 100 mg/l<br>Toxic to algae.                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Naphtha (petroleum), light<br>alkylate                | EC50: 3.1 mg/l<br>Exposure time: 96 h<br>Species: <i>Selenastrum capricornutum</i> (algae)<br>static test Method: OECD Test Guideline 201                                                                                                                                                                                                                                                                                                                                                         |
| Toluene                                               | EC50: 134 mg/l<br>Exposure time: 72 h<br>Species: <i>Chlamydomonas angulosa</i> (Green algae)                                                                                                                                                                                                                                                                                                                                                                                                     |
| Isopentane                                            | EC50: 7.51 mg/l<br>Exposure time: 72 h<br>Species: <i>Scenedesmus capricornutum</i> (fresh water algae)<br>Growth inhibition Method: OECD Test Guideline 201<br>Information given is based on data obtained from similar<br>substances.<br><br>EL50: 25.3 mg/l<br>Exposure time: 72 h<br>Species: <i>Raphidocellus subcapitata</i> (algae)<br>Method: QSAR modeled data<br>The value is given based on a SAR/AAR approach using<br>OECD Toolbox, DEREK, VEGA QSAR models (CAESAR<br>models), etc. |
| 2,2,4-Trimethylpentane<br>(Isooctane)                 | EL50: 2.943 mg/l<br>Exposure time: 72 h<br>Method: QSAR modeled data                                                                                                                                                                                                                                                                                                                                                                                                                              |
| C9-C11 Isoalkanes                                     | ErL50: > 1,000 mg/l<br>Exposure time: 72 h<br>Species: <i>Pseudokirchneriella subcapitata</i> (algae)<br>static test Method: OECD Test Guideline 201<br>Information given is based on data obtained from similar<br>substances.                                                                                                                                                                                                                                                                   |
| Isoalkanes C7-8                                       | EL50: 29.0 mg/l<br>Exposure time: 72 h<br>Species: <i>Pseudokirchneriella subcapitata</i> (green algae)<br>Growth inhibition Method: OECD Test Guideline 201                                                                                                                                                                                                                                                                                                                                      |
| Cyclopentane                                          | EC50: 2.04 mg/l<br>Exposure time: 72 h<br>Species: <i>Scenedesmus capricornutum</i> (fresh water algae)<br>static test Method: OECD Test Guideline 201<br>Information given is based on data obtained from similar<br>substances.                                                                                                                                                                                                                                                                 |
| n-Heptane                                             | EL50: 4.338 mg/l<br>Exposure time: 72 h<br>Species: <i>Pseudokirchneriella subcapitata</i> (microalgae)<br>Method: QSAR                                                                                                                                                                                                                                                                                                                                                                           |
| n-hexane                                              | EL50: 9.29 mg/l<br>Exposure time: 72 h<br>Species: <i>Pseudokirchneriella subcapitata</i> (green algae)<br>Method: QSAR modeled data                                                                                                                                                                                                                                                                                                                                                              |

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| 1-Hexene           | <p>NOEC: 1.8 mg/l<br/>Exposure time: 96 h<br/>Species: Pseudokirchneriella subcapitata (green algae)<br/>Growth inhibition Method: OECD Test Guideline 201<br/>Information given is based on data obtained from similar substances.</p> <p>EC50: &gt; 5.5 mg/l<br/>Exposure time: 96 h<br/>Species: Pseudokirchneriella subcapitata (green algae)<br/>Growth inhibition Method: OECD Test Guideline 201<br/>Information given is based on data obtained from similar substances.</p> |
| Ethylbenzene       | <p>ErC50: 5.0 mg/l<br/>Exposure time: 96 h<br/>Species: Selenastrum capricornutum (algae)</p> <p>ErC50: 7.7 mg/l<br/>Exposure time: 72 h<br/>Species: Skeletonema costatum (Marine Algae)</p>                                                                                                                                                                                                                                                                                        |
| 2-Methylpentane    | <p>4.321 mg/l<br/>Exposure time: 96 h<br/>Species: green algae<br/>Method: Value calculated using ECOSAR.</p>                                                                                                                                                                                                                                                                                                                                                                        |
| Naphthalene        | <p>EC50: 2.96 mg/l<br/>Exposure time: 48 h<br/>Species: Selenastrum capricornutum (algae)</p>                                                                                                                                                                                                                                                                                                                                                                                        |
| Benzene            | <p>ErC50: 100 mg/l<br/>Exposure time: 72 h<br/>Species: Pseudokirchneriella subcapitata (green algae)<br/>Test substance: yes<br/>Method: OECD Test Guideline 201</p>                                                                                                                                                                                                                                                                                                                |
| Methylcyclopentane | <p>EC50: 5.048 mg/l<br/>Exposure time: 96 h<br/>Species: green algae<br/>Method: QSAR</p>                                                                                                                                                                                                                                                                                                                                                                                            |
| 2-methyl-2-butene  | <p>ErC50: 13.2 mg/l<br/>Exposure time: 72 h<br/>Species: Pseudokirchneriella subcapitata (green algae)<br/>static test Method: OECD Test Guideline 201</p>                                                                                                                                                                                                                                                                                                                           |
| Cyclohexane        | <p>EbC50: 3.4 mg/l<br/>Exposure time: 72 h<br/>Species: Selenastrum capricornutum (algae)</p> <p>NOEC: 0.925 mg/l<br/>Exposure time: 72 h<br/>Species: Pseudokirchneriella subcapitata (microalgae)<br/>Method: OECD Test Guideline 201</p>                                                                                                                                                                                                                                          |
| n-Pentane          | <p>EL50: 7.79 mg/l<br/>Exposure time: 72 h<br/>Species: Raphidocellus subcapitata (algae)<br/>Method: QSAR modeled data</p>                                                                                                                                                                                                                                                                                                                                                          |

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The value is given based on a SAR/AAR approach using OECD Toolbox, DEREK, VEGA QSAR models (CAESAR models), etc.

|                   |                                                                                                                            |
|-------------------|----------------------------------------------------------------------------------------------------------------------------|
| Methylcyclohexane | EC50: 0.134 mg/l<br>Exposure time: 72 h<br>Species: Pseudokirchneriella subcapitata (green algae)<br>static test           |
| Hydrogen Sulfide  | EC50: 1.87 mg/l<br>Exposure time: 24 h<br>Species: Selenastrum capricornutum (algae)<br>static test<br>Test substance: yes |
| Isoprene          | EC50: > 35.2 mg/l<br>Exposure time: 96 h<br>Species: Pseudokirchneriella subcapitata (green algae)                         |

|                                      |   |                               |   |
|--------------------------------------|---|-------------------------------|---|
| <b>M-Factor</b><br>cyclohexane       | : | M-Factor (Acute Aquat. Tox.)  | 1 |
|                                      |   | M-Factor (Chron. Aquat. Tox.) | 1 |
| <b>M-Factor</b><br>methylcyclohexane |   | M-Factor (Acute Aquat. Tox.)  | 1 |
|                                      |   | M-Factor (Chron. Aquat. Tox.) | 1 |

Toxicity to bacteria

|                   |   |                                                           |
|-------------------|---|-----------------------------------------------------------|
| Methylcyclohexane | : | IC50: 29 mg/l<br>Exposure time: 15 h<br>Growth inhibition |
|-------------------|---|-----------------------------------------------------------|

Toxicity to fish (Chronic toxicity)

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| Hydrocarbons, C3-11,<br>catalytic cracker distillates | : NOEL: 2.6 mg/l<br>Toxic effects on fish and plankton                                                                                                                                                                                        |
| Isopentane                                            | EL10: 6.57 mg/l<br>Exposure time: 60 d<br>Species: Oncorhynchus mykiss (rainbow trout)<br>Method: QSAR modeled data<br>The value is given based on a SAR/AAR approach using<br>OECD Toolbox, DEREK, VEGA QSAR models (CAESAR<br>models), etc. |
| C9-C11 Isoalkanes                                     | NOELR: 0.132 mg/l<br>Species: Oncorhynchus mykiss (rainbow trout)<br>Method: QSAR modeled data                                                                                                                                                |
| Isoalkanes C7-8                                       | EL10: 0.38 mg/l<br>Exposure time: 60 d<br>Species: Oncorhynchus mykiss (rainbow trout)<br>Method: QSAR modeled data                                                                                                                           |
| n-Heptane                                             | NOELR: 1.284 mg/l<br>Exposure time: 28 d<br>Species: Oncorhynchus mykiss (rainbow trout)<br>Method: QSAR modeled data                                                                                                                         |
| n-Pentane                                             | EL10: 2.03 mg/l<br>Exposure time: 60 d<br>Species: Oncorhynchus mykiss (rainbow trout)<br>Method: QSAR modeled data<br>The value is given based on a SAR/AAR approach using<br>OECD Toolbox, DEREK, VEGA QSAR models (CAESAR<br>models), etc. |

**Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)**

|                                                       |                                                                                                                                                                                                           |
|-------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Naphtha, Petroleum, Heavy<br>Catalytic Cracked        | : NOELR: 2.6 mg/l<br>Exposure time: 21 d<br>Species: Daphnia magna (Water flea)<br>semi-static test<br>Method: OECD Test Guideline 211                                                                    |
| Hydrocarbons, C3-11,<br>catalytic cracker distillates | : NOEL: 2.6 mg/l<br>Species: Daphnia sp. (Water flea)<br>Toxic effects on fish and plankton                                                                                                               |
| Naphtha (petroleum), light<br>alkylate                | : NOELR: 2.6 mg/l<br>Exposure time: 21 d<br>Species: Daphnia magna (Water flea)<br>semi-static test<br>Method: OECD Test Guideline 211                                                                    |
| Isopentane                                            | : EL10: 11.5 mg/l<br>Exposure time: 21 d<br>Species: Daphnia magna (Water flea)<br>The value is given based on a SAR/AAR approach using<br>OECD Toolbox, DEREK, VEGA QSAR models (CAESAR<br>models), etc. |
| 2,2,4-Trimethylpentane                                | : NOEL: 0.17 mg/l                                                                                                                                                                                         |

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|----------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| (Isooctane)                                        | <p>Exposure time: 21 d<br/> Species: Daphnia magna (Water flea)<br/> Method: OECD Test Guideline 211<br/> Information given is based on data obtained from similar substances.</p>                               |
| Isoalkanes C7-8                                    | <p>: NOELR: 1 mg/l<br/> Exposure time: 21 d<br/> Species: Daphnia magna (Water flea)<br/> Method: OECD Test Guideline 211<br/> Information given is based on data obtained from similar substances.</p>          |
| Ethylbenzene                                       | <p>: NOEC: 1 mg/l<br/> Exposure time: 7 d<br/> Species: Daphnia pulex (Water flea)<br/> semi-static test<br/> Analytical monitoring: yes</p>                                                                     |
| n-Pentane                                          | <p>: EL10: 3.54 mg/l<br/> Exposure time: 21 d<br/> Species: Daphnia magna (Water flea)<br/> The value is given based on a SAR/AAR approach using OECD Toolbox, DEREK, VEGA QSAR models (CAESAR models), etc.</p> |
| Hydrogen Sulfide                                   | <p>: Not classified due to data which are conclusive although insufficient for classification.</p>                                                                                                               |
| Biodegradability                                   |                                                                                                                                                                                                                  |
| Naphtha, Petroleum, Heavy Catalytic Cracked        | <p>: aerobic<br/> Result: Inherently biodegradable.<br/> 96 %<br/> Testing period: 56 d<br/> Method: ISO/DIS 14593</p>                                                                                           |
| Naphtha (petroleum), light catalytic reformed      | <p>: aerobic<br/> 96.17 %<br/> Method: ISO/DIS 14593<br/> Expected to be inherently biodegradable.</p>                                                                                                           |
| Hydrocarbons, C3-11, catalytic cracker distillates | <p>: 96.17 %<br/> Testing period: 28 d<br/> Expected to be inherently biodegradable.</p>                                                                                                                         |
| Naphtha (petroleum), light alkylate                | <p>: This material is not expected to be readily biodegradable.<br/> Expected to be inherently biodegradable.</p>                                                                                                |
| Toluene                                            | <p>: This material is expected to be readily biodegradable.</p>                                                                                                                                                  |
| Isopentane                                         | <p>: aerobic<br/> Result: Readily biodegradable.<br/> 71.43 %<br/> Testing period: 28 d<br/> Method: OECD Test Guideline 301F</p>                                                                                |
| 2,2,4-Trimethylpentane (Isooctane)                 | <p>: Result: Not readily biodegradable.<br/> Method: OECD Test Guideline 301</p>                                                                                                                                 |

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|                    | Expected to be inherently biodegradable.<br>Information given is based on data obtained from similar substances.                                                                                                                                                |
| Xylenes            | : This material is expected to be readily biodegradable.                                                                                                                                                                                                        |
| C9-C11 Isoalkanes  | : aerobic<br>53 %<br>Testing period: 28 d<br>Method: OECD Test Guideline 301F<br>This material is not expected to be readily biodegradable.<br>Expected to be inherently biodegradable.<br>Information given is based on data obtained from similar substances. |
| Isoalkanes C7-8    | : Result: Not readily biodegradable.<br>60 %<br>Testing period: 60 d<br>Method: OECD Test Guideline 301F<br>Expected to be inherently biodegradable.<br>Information given is based on data obtained from similar substances.                                    |
| Cyclopentane       | : aerobic<br>Result: Not readily biodegradable.<br>0 %<br>Testing period: 28 d<br>Method: OECD Test Guideline 301F<br>Expected to be inherently biodegradable.                                                                                                  |
| n-Heptane          | : Result: Readily biodegradable.<br>70 %<br>Testing period: 10 d                                                                                                                                                                                                |
| n-Butane           | : This material is expected to be readily biodegradable.                                                                                                                                                                                                        |
| n-hexane           | : This material is expected to be readily biodegradable.                                                                                                                                                                                                        |
| 1-Hexene           | : 67 - 98 %<br>Testing period: 28 d<br>Test substance: yes<br>According to the results of tests of biodegradability this product is considered as being readily biodegradable.                                                                                  |
| Ethylbenzene       | : This material is expected to be readily biodegradable.                                                                                                                                                                                                        |
| 2,2-Dimethylbutane | : This material is volatile and is expected to partition to air.<br>Expected to be inherently biodegradable.                                                                                                                                                    |
| 2-Methylpentane    | : Expected to be biodegradable<br>Information given is based on data obtained from similar substances.                                                                                                                                                          |
| Benzene            | : According to the results of tests of biodegradability this product is considered as being readily biodegradable.                                                                                                                                              |
| Methylcyclopentane | : aerobic<br>Result: Readily biodegradable.<br>93 - 94 %<br>Testing period: 28 d                                                                                                                                                                                |

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|                                                    | Method: OECD Test Guideline 301C<br>Information given is based on data obtained from similar substances.                                             |
| 2-methyl-2-butene                                  | : aerobic<br>7 %<br>Testing period: 28 d<br>Method: OECD Test Guideline 301D<br>This material is not expected to be readily biodegradable.           |
| Cyclohexane                                        | : 77 %<br>Testing period: 28 d<br>Method: OECD Test Guideline 301<br>This material is expected to be readily biodegradable.                          |
| n-Pentane                                          | : Result: Readily biodegradable.<br>87 %<br>Method: OECD Test Guideline 301F                                                                         |
| Methylcyclohexane                                  | : aerobic<br>0 %<br>Testing period: 28 d<br>Method: OECD Test Guideline 301D                                                                         |
| Hydrogen Sulfide                                   | : The methods for determining biodegradability are not applicable to inorganic substances.<br>This material is expected to be readily biodegradable. |
| Isoprene                                           | : Expected to be biodegradable                                                                                                                       |
| Physico-chemical removability                      |                                                                                                                                                      |
| Hydrogen Sulfide                                   | : The product can be degraded by abiotic (e.g. chemical or photolytic) processes.<br>Readily eliminated from water                                   |
| Bioaccumulation                                    |                                                                                                                                                      |
| Naphtha, Petroleum, Heavy Catalytic Cracked        | : The product may be accumulated in organisms.                                                                                                       |
| Naphtha (petroleum), light catalytic reformed      | : The product may be accumulated in organisms.                                                                                                       |
| Hydrocarbons, C3-11, catalytic cracker distillates | : No data available                                                                                                                                  |
| Naphtha (petroleum), light alkylate                | : The product may be accumulated in organisms.                                                                                                       |
| Toluene                                            | : This material is not expected to bioaccumulate.                                                                                                    |
| Isopentane                                         | : Accumulation in aquatic organisms is unlikely.                                                                                                     |
| 2,2,4-Trimethylpentane (Isooctane)                 | : Bioconcentration factor (BCF): 231<br>Method: QSAR modeled data<br>This material is not expected to bioaccumulate.                                 |
| Xylenes                                            | : This material is not expected to bioaccumulate.                                                                                                    |
| C9-C11 Isoalkanes                                  | : This material is not expected to bioaccumulate.<br>Information given is based on data obtained from similar                                        |

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substances.

Isoalkanes C7-8 : This material is not expected to bioaccumulate.

Cyclopentane : Accumulation in aquatic organisms is unlikely.

n-Heptane : Bioconcentration factor (BCF): 552  
 Method: QSAR modeled data  
 This material is not expected to bioaccumulate.

n-Butane : This material is not expected to bioaccumulate.

n-hexane : Bioconcentration factor (BCF): 501  
 Does not significantly accumulate in organisms.

1-Hexene : This material is not expected to bioaccumulate.

Ethylbenzene : Bioconcentration factor (BCF): 110

2,2-Dimethylbutane : Accumulation in aquatic organisms is unlikely.

2-Methylpentane : Does not significantly accumulate in organisms.

Benzene : Bioconcentration factor (BCF): 13

Methylcyclopentane : This material is not expected to bioaccumulate.

Cyclohexane : Bioconcentration factor (BCF): 167  
 This material is not expected to bioaccumulate.

n-Pentane : Bioconcentration factor (BCF): 171  
 Method: QSAR modeled data  
 This material is not expected to bioaccumulate.

Methylcyclohexane : No data available

Hydrogen Sulfide : This material is not expected to bioaccumulate.

**Mobility**

Naphtha, Petroleum, Heavy : No data available

Catalytic Cracked : No data available

Naphtha (petroleum), light : No data available

catalytic reformed

Naphtha (petroleum), light : This product may float or sink in water.  
 alkylate After release, disperses into the air.

Toluene : Not expected to adsorb on soil.

Isopentane : No data available

2,2,4-Trimethylpentane : Medium: Air  
 (Isooctane) Method: Calculation, Mackay Level I Fugacity Model  
 After release, disperses into the air.

C9-C11 Isoalkanes : The product will be dispersed amongst the various  
 environmental compartments (soil/ water/ air).

Isoalkanes C7-8 : Medium: Air

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|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                           | Method: Calculation, Mackay Level III Fugacity Model<br>Content: 100 %                                                                                     |
| Cyclopentane              | : No data available                                                                                                                                        |
| n-Heptane                 | : Medium: Air<br>Method: Calculation, Mackay Level I Fugacity Model<br>Content: 100 %<br>After release, disperses into the air.                            |
| n-Butane                  | : The product evaporates readily.                                                                                                                          |
| n-hexane                  | : Method: Calculation, Mackay Level III Fugacity Model<br>The product will be dispersed amongst the various environmental compartments (soil/ water/ air). |
| 1-Hexene                  | : No data available                                                                                                                                        |
| Ethylbenzene              | : Method: Calculation, Mackay Level I Fugacity Model<br>Disperses rapidly in air.                                                                          |
| Benzene                   | : No data available                                                                                                                                        |
| Methylcyclopentane        | : No data available                                                                                                                                        |
| Cyclohexane               | : Not expected to adsorb on soil.                                                                                                                          |
| n-Pentane                 | : After release, disperses into the air.                                                                                                                   |
| Hydrogen Sulfide          | : No data available<br>The product evaporates readily.                                                                                                     |
| Results of PBT assessment |                                                                                                                                                            |
| Naphtha, Petroleum, Heavy | : Non-classified PBT substance, Non-classified vPvB substance                                                                                              |
| Catalytic Cracked         |                                                                                                                                                            |
| Toluene                   | : Non-classified vPvB substance, Non-classified PBT substance                                                                                              |
| Isopentane                | : Non-classified PBT substance, Non-classified vPvB substance                                                                                              |
| 2,2,4-Trimethylpentane    | : Non-classified PBT substance, Non-classified vPvB substance                                                                                              |
| (Isooctane)               |                                                                                                                                                            |
| Isoalkanes C7-8           | : Non-classified PBT substance, Non-classified vPvB substance                                                                                              |
| n-Heptane                 | : Non-classified PBT substance, Non-classified vPvB substance                                                                                              |
| n-Butane                  | : Not persistent, bioaccumulative, and toxic (PBT)., Not very persistent and very bioaccumulative (vPvB).                                                  |
| n-hexane                  | : Non-classified vPvB substance, Non-classified PBT substance                                                                                              |
| 1-Hexene                  | : Non-classified PBT substance, Non-classified vPvB substance                                                                                              |
| Ethylbenzene              | : Non-classified vPvB substance, Non-classified PBT substance                                                                                              |
| Benzene                   | : Not persistent, bioaccumulative, and toxic (PBT)., Not very persistent and very bioaccumulative (vPvB).                                                  |
| Methylcyclopentane        | : Non-classified PBT substance, Non-classified vPvB substance                                                                                              |

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|                                   |                                                                                                                                                          |
|-----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2-methyl-2-butene                 | : Non-classified PBT substance, Non-classified vPvB substance                                                                                            |
| Cyclohexane                       | : Non-classified PBT substance, Non-classified vPvB substance                                                                                            |
| Methylcyclohexane                 | : Non-classified PBT substance, Non-classified vPvB substance                                                                                            |
| Additional ecological information | : An environmental hazard cannot be excluded in the event of unprofessional handling or disposal., Very toxic to aquatic life with long lasting effects. |

**Ecotoxicology Assessment**

## Short-term (acute) aquatic hazard

|                                                    |                               |
|----------------------------------------------------|-------------------------------|
| Naphtha, Petroleum, Heavy Catalytic Cracked        | : Toxic to aquatic life.      |
| Naphtha (petroleum), light catalytic reformed      | : Toxic to aquatic life.      |
| Hydrocarbons, C3-11, catalytic cracker distillates | : Toxic to aquatic life.      |
| Naphtha (petroleum), light alkylate                | : Toxic to aquatic life.      |
| Toluene                                            | : Toxic to aquatic life.      |
| Isopentane                                         | : Toxic to aquatic life.      |
| 3,3-Dimethylpentane                                | : Very toxic to aquatic life. |
| 2,2,4-Trimethylpentane (Isooctane)                 | : Very toxic to aquatic life. |
| Xylenes                                            | : Toxic to aquatic life.      |
| C9-C11 Isoalkanes                                  | : Toxic to aquatic life.      |
| Isoalkanes C7-8                                    | : Toxic to aquatic life.      |
| Heptane, branched, cyclic and linear               | : Very toxic to aquatic life. |
| Cyclopentane                                       | : Harmful to aquatic life.    |
| n-Heptane                                          | : Very toxic to aquatic life. |
| n-hexane                                           | : Toxic to aquatic life.      |
| 1-Hexene                                           | : Toxic to aquatic life.      |
| Ethylbenzene                                       | : Toxic to aquatic life.      |
| 1,2,4-Trimethylbenzene                             | : Toxic to aquatic life.      |
| 2,2-Dimethylbutane                                 | : Toxic to aquatic life.      |
| 2-Methylpentane                                    | : Toxic to aquatic life.      |
| Naphthalene                                        | : Very toxic to aquatic life. |
| Benzene                                            | : Toxic to aquatic life.      |
| 3-Methylpentane                                    | : Toxic to aquatic life.      |

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|                                                    |                                                                     |
|----------------------------------------------------|---------------------------------------------------------------------|
| 2-Methylhexane                                     | : Very toxic to aquatic life.                                       |
| Methylcyclopentane                                 | : Toxic to aquatic life.                                            |
| 3-Methylhexane                                     | : Very toxic to aquatic life.                                       |
| 2-methyl-2-butene                                  | : Toxic to aquatic life.                                            |
| Cyclohexane                                        | : Very toxic to aquatic life.                                       |
| 2,3-Dimethylbutane                                 | : Toxic to aquatic life.                                            |
| 2,3-Dimethylpentane                                | : Very toxic to aquatic life.                                       |
| 2,4-Dimethylpentane                                | : Very toxic to aquatic life.                                       |
| n-Pentane                                          | : Toxic to aquatic life.                                            |
| Methylcyclohexane                                  | : Very toxic to aquatic life.                                       |
| 2,3,4-Trimethylpentane                             | : Very toxic to aquatic life.                                       |
| Hydrogen Sulfide                                   | : Very toxic to aquatic life.                                       |
| Isoprene                                           | : Toxic to aquatic life.                                            |
| Long-term (chronic) aquatic hazard                 |                                                                     |
| Naphtha, Petroleum, Heavy Catalytic Cracked        | : Toxic to aquatic life with long lasting effects.                  |
| Naphtha (petroleum), light catalytic reformed      | : Toxic to aquatic life with long lasting effects.                  |
| Hydrocarbons, C3-11, catalytic cracker distillates | : Toxic to aquatic life with long lasting effects.                  |
| Naphtha (petroleum), light alkylate                | : Toxic to aquatic life with long lasting effects.                  |
| Toluene                                            | : Harmful to aquatic life with long lasting effects.                |
| Isopentane                                         | : This material is not expected to be harmful to aquatic organisms. |
| 3,3-Dimethylpentane                                | : Very toxic to aquatic life with long lasting effects.             |
| 2,2,4-Trimethylpentane (Isooctane)                 | : Very toxic to aquatic life with long lasting effects.             |
| Xylenes                                            | : Harmful to aquatic life with long lasting effects.                |
| C9-C11 Isoalkanes                                  | : Toxic to aquatic life with long lasting effects.                  |
| Isoalkanes C7-8                                    | : Toxic to aquatic life with long lasting effects.                  |
| Heptane, branched, cyclic and linear               | : Very toxic to aquatic life with long lasting effects.             |
| Cyclopentane                                       | : Harmful to aquatic life with long lasting effects.                |
| n-Heptane                                          | : Very toxic to aquatic life with long lasting effects.             |
| n-hexane                                           | : Toxic to aquatic life with long lasting effects.                  |

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|                        |                                                         |
|------------------------|---------------------------------------------------------|
| 1-Hexene               | : No data available                                     |
| Ethylbenzene           | : Harmful to aquatic life with long lasting effects.    |
| 1,2,4-Trimethylbenzene | : Toxic to aquatic life with long lasting effects.      |
| 2,2-Dimethylbutane     | : Toxic to aquatic life with long lasting effects.      |
| 2-Methylpentane        | : Toxic to aquatic life with long lasting effects.      |
| Naphthalene            | : Very toxic to aquatic life with long lasting effects. |
| Benzene                | : Harmful to aquatic life with long lasting effects.    |
| 3-Methylpentane        | : Toxic to aquatic life with long lasting effects.      |
| 2-Methylhexane         | : Very toxic to aquatic life with long lasting effects. |
| Methylcyclopentane     | : No data available                                     |
| 3-Methylhexane         | : Very toxic to aquatic life with long lasting effects. |
| 2-methyl-2-butene      | : Toxic to aquatic life with long lasting effects.      |
| Cyclohexane            | : Very toxic to aquatic life with long lasting effects. |
| 2,3-Dimethylbutane     | : Toxic to aquatic life with long lasting effects.      |
| 2,3-Dimethylpentane    | : Very toxic to aquatic life with long lasting effects. |
| 2,4-Dimethylpentane    | : Very toxic to aquatic life with long lasting effects. |
| n-Pentane              | : Toxic to aquatic life with long lasting effects.      |
| Methylcyclohexane      | : Very toxic to aquatic life with long lasting effects. |
| 2,3,4-Trimethylpentane | : Very toxic to aquatic life with long lasting effects. |
| Hydrogen Sulfide       | : Not applicable                                        |
| Isoprene               | : Toxic to aquatic life with long lasting effects.      |

**SECTION 13: Disposal considerations**

The information in this SDS pertains only to the product as shipped.

Use material for its intended purpose or recycle if possible. This material, if it must be discarded, may meet the criteria of a hazardous waste as defined by US EPA under RCRA (40 CFR 261) or other State and local regulations. Measurement of certain physical properties and analysis for regulated components may be necessary to make a correct determination. If this material is classified as a hazardous waste, federal law requires disposal at a licensed hazardous waste disposal facility.

|         |                                                                                                                                                                                                              |
|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product | : The product should not be allowed to enter drains, water courses or the soil. Do not contaminate ponds, waterways or ditches with chemical or used container. Send to a licensed waste management company. |
|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                        |                                                           |
|------------------------|-----------------------------------------------------------|
| Contaminated packaging | : Empty remaining contents. Dispose of as unused product. |
|------------------------|-----------------------------------------------------------|

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Do not re-use empty containers. Do not burn, or use a cutting torch on, the empty drum.

**SECTION 14: Transport information**

**The shipping descriptions shown here are for bulk shipments only, and may not apply to shipments in non-bulk packages (see regulatory definition).**

Consult the appropriate domestic or international mode-specific and quantity-specific Dangerous Goods Regulations for additional shipping description requirements (e.g., technical name or names, etc.) Therefore, the information shown here, may not always agree with the bill of lading shipping description for the material. Flashpoints for the material may vary slightly between the SDS and the bill of lading.

**US DOT (UNITED STATES DEPARTMENT OF TRANSPORTATION)**

UN1203, GASOLINE, 3, II, MARINE POLLUTANT, (2,2,4-TRIMETHYLPENTANE (ISOOCTANE), N-HEPTANE)

**IMO / IMDG (INTERNATIONAL MARITIME DANGEROUS GOODS)**

UN1203, GASOLINE, 3, II, (-37 °C c.c.), MARINE POLLUTANT, (NAPHTHA, PETROLEUM, HEAVY CATALYTIC CRACKED)

**IATA (INTERNATIONAL AIR TRANSPORT ASSOCIATION)**

UN1203, GASOLINE, 3, II

**ADR (AGREEMENT ON DANGEROUS GOODS BY ROAD (EUROPE))**

UN1203, GASOLINE, 3, II, (D/E), ENVIRONMENTALLY HAZARDOUS, (NAPHTHA, PETROLEUM, HEAVY CATALYTIC CRACKED)

**RID (REGULATIONS CONCERNING THE INTERNATIONAL TRANSPORT OF DANGEROUS GOODS (EUROPE))**

33, UN1203, GASOLINE, 3, II, ENVIRONMENTALLY HAZARDOUS, (NAPHTHA, PETROLEUM, HEAVY CATALYTIC CRACKED)

**ADN (EUROPEAN AGREEMENT CONCERNING THE INTERNATIONAL CARRIAGE OF DANGEROUS GOODS BY INLAND WATERWAYS)**

UN1203, GASOLINE, 3, II, ENVIRONMENTALLY HAZARDOUS, (NAPHTHA, PETROLEUM, HEAVY CATALYTIC CRACKED)

Maritime transport in bulk according to IMO instruments

**SECTION 15: Regulatory information****National legislation**

**SARA 311/312 Hazards** : Flammable (gases, aerosols, liquids, or solids)  
Germ cell mutagenicity

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Carcinogenicity  
 Reproductive toxicity  
 Specific target organ toxicity (single or repeated exposure)  
 Aspiration hazard  
 Skin corrosion or irritation

CERCLA Reportable Quantity : 200 lbs

Benzene

SARA 302 Reportable Quantity : Listed substances in the product are at low enough levels to not be expected to exceed the RQ

Hydrogen Sulfide

SARA 302 Threshold Planning Quantity : This material does not contain any components with a section 302 EHS TPQ.

SARA 304 Reportable Quantity : Listed substances in the product are at low enough levels to not be expected to exceed the RQ

Hydrogen Sulfide 7783-06-4 100 lbs

SARA 313 Components : The following components are subject to reporting levels established by SARA Title III, Section 313:

: Toluene - 108-88-3  
 Xylenes - 1330-20-7  
 n-hexane - 110-54-3  
 1,2,4-Trimethylbenzene - 95-63-6  
 Ethylbenzene - 100-41-4  
 Benzene - 71-43-2  
 Naphthalene - 91-20-3  
 Cyclohexane - 110-82-7  
 Isoprene - 78-79-5

**Clean Air Act**

Ozone-Depletion Potential : This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

The following chemical(s) are listed as HAP under the U.S. Clean Air Act, Section 112 (40 CFR 61):

: Toluene - 108-88-3  
 2,2,4-Trimethylpentane (Isooctane) - 540-84-1  
 Xylenes - 1330-20-7  
 n-hexane - 110-54-3  
 Ethylbenzene - 100-41-4  
 Naphthalene - 91-20-3  
 Benzene - 71-43-2

The following chemical(s) are listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F):

: Isopentane - 78-78-4

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n-Butane - 106-97-8  
 n-Pentane - 109-66-0  
 2-methyl-1-butene - 563-46-2

The following chemical(s) are listed under the U.S. Clean Air Act Section 111 SOCM Intermediate or Final VOC's (40 CFR 60.489):

: Toluene - 108-88-3  
 Isopentane - 78-78-4  
 Xylenes - 1330-20-7  
 Ethylbenzene - 100-41-4  
 Benzene - 71-43-2  
 Cyclohexane - 110-82-7  
 n-Pentane - 109-66-0  
 Methylcyclohexane - 108-87-2

**US State Regulations****Pennsylvania Right To Know**

: Naphtha, Petroleum, Heavy Catalytic Cracked - 64741-54-4  
 Naphtha (petroleum), light catalytic reformed - 64741-63-5  
 Hydrocarbons, C3-11, catalytic cracker distillates - 68476-46-0  
 Naphtha (petroleum), light alkylate - 64741-66-8  
 Toluene - 108-88-3  
 Isopentane - 78-78-4  
 3,3-Dimethylpentane - 562-49-2  
 2,2,4-Trimethylpentane (Isooctane) - 540-84-1  
 Xylenes - 1330-20-7  
 C9-C11 Isoalkanes - 68551-16-6  
 Isoalkanes C7-8 - 70024-92-9  
 Heptane, branched, cyclic and linear - 426260-76-6  
 n-Heptane - 142-82-5  
 Cyclopentane - 287-92-3  
 n-Butane - 106-97-8  
 n-hexane - 110-54-3  
 1-Hexene - 592-41-6  
 Ethylbenzene - 100-41-4  
 1,2,4-Trimethylbenzene - 95-63-6  
 2,2-Dimethylbutane - 75-83-2  
 2-Methylpentane - 107-83-5  
 Naphthalene - 91-20-3  
 Benzene - 71-43-2  
 3-Methylpentane - 96-14-0  
 Related Materials -  
 2-Methylhexane - 591-76-4  
 Methylcyclopentane - 96-37-7  
 3-Methylhexane - 589-34-4  
 2-methyl-2-butene - 513-35-9  
 Cyclohexane - 110-82-7  
 2,3-Dimethylbutane - 79-29-8  
 2,3-Dimethylpentane - 565-59-3  
 2,4-Dimethylpentane - 108-08-7  
 n-Pentane - 109-66-0  
 Methylcyclohexane - 108-87-2

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2-methyl-1-butene - 563-46-2  
 2-Methyl-2-Pentene - 625-27-4  
 Hydrogen Sulfide - 7783-06-4  
 Isoprene - 78-79-5  
 Cumene - 98-82-8

California Prop. 65  
 Components

: WARNING: This product can expose you to chemicals including [listed below], which is [are] known to the State of California to cause cancer. For more information go to [www.P65Warnings.ca.gov/food](http://www.P65Warnings.ca.gov/food).

|              |          |
|--------------|----------|
| Ethylbenzene | 100-41-4 |
| Benzene      | 71-43-2  |
| Naphthalene  | 91-20-3  |
| Isoprene     | 78-79-5  |
| Cumene       | 98-82-8  |

WARNING: This product can expose you to chemicals including [listed below], which is [are] known to the State of California to cause birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

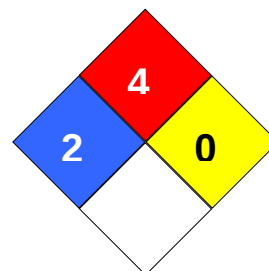
|          |          |
|----------|----------|
| Toluene  | 108-88-3 |
| n-hexane | 110-54-3 |
| Benzene  | 71-43-2  |

**Notification status**

|                                     |                                                                                |
|-------------------------------------|--------------------------------------------------------------------------------|
| Europe EU REACH                     | : Not in compliance with the inventory                                         |
| Switzerland CH INV                  | : Not in compliance with the inventory                                         |
| United States of America (USA) TSCA | : On or in compliance with the active portion of the TSCA inventory            |
| Canada NDSL                         | : This product contains one or several components listed in the Canadian NDSL. |
| Australia AU AIC                    | : Not in compliance with the inventory                                         |
| New Zealand NZIoC                   | : Not in compliance with the inventory                                         |
| Japan ENCS                          | : Not in compliance with the inventory                                         |
| Japan ISHL                          | : On the inventory, or in compliance with the inventory                        |
| Korea KECI                          | : Not in compliance with the inventory                                         |
| Philippines PICCS                   | : Not in compliance with the inventory                                         |
| China IECSC                         | : Not in compliance with the inventory                                         |
| Taiwan TW TCSI                      | : Not in compliance with the inventory                                         |
| Other TECI                          | : Not in compliance with the inventory                                         |

**SECTION 16: Other information**

**NFPA Classification** : Health Hazard: 2  
 Fire Hazard: 4  
 Reactivity Hazard: 0



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Revision Date : 2026-08-19  
 Date of last issue : 2021-06-14

Print Date : 2026-08-21

**Further information**

Legacy SDS Number : 34840

Significant changes since the last version are highlighted in the margin. This version replaces all previous versions.

The information in this SDS pertains only to the product as shipped.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

**Key or legend to abbreviations and acronyms used in the safety data sheet**

|        |                                                          |       |                                                                                      |
|--------|----------------------------------------------------------|-------|--------------------------------------------------------------------------------------|
| ACGIH  | American Conference of Government Industrial Hygienists  | LD50  | Lethal Dose 50%                                                                      |
| AIIC   | Australian Inventory of Industrial Chemicals             | LOAEL | Lowest Observed Adverse Effect Level                                                 |
| DSL    | Canada, Domestic Substances List                         | NFPA  | National Fire Protection Agency                                                      |
| NDSL   | Canada, Non-Domestic Substances List                     | NIOSH | National Institute for Occupational Safety & Health                                  |
| CNS    | Central Nervous System                                   | NTP   | National Toxicology Program                                                          |
| CAS    | Chemical Abstract Service                                | NZIoC | New Zealand Inventory of Chemicals                                                   |
| EC50   | Effective Concentration                                  | NOAEL | No Observable Adverse Effect Level                                                   |
| EC50   | Effective Concentration 50%                              | NOEC  | No Observed Effect Concentration                                                     |
| EGEST  | EOSCA Generic Exposure Scenario Tool                     | OSHA  | Occupational Safety & Health Administration                                          |
| EOSCA  | European Oilfield Specialty Chemicals Association        | PEL   | Permissible Exposure Limit                                                           |
| EINECS | European Inventory of Existing Chemical Substances       | PICCS | Philippines Inventory of Commercial Chemical Substances                              |
| MAK    | Germany Maximum Concentration Values                     | PRNT  | Presumed Not Toxic                                                                   |
| GHS    | Globally Harmonized System                               | RCRA  | Resource Conservation Recovery Act                                                   |
| >=     | Greater Than or Equal To                                 | STEL  | Short-term Exposure Limit                                                            |
| IC50   | Inhibition Concentration 50%                             | SARA  | Superfund Amendments and Reauthorization Act.                                        |
| IARC   | International Agency for Research on Cancer              | TLV   | Threshold Limit Value                                                                |
| IECSC  | Inventory of Existing Chemical Substances in China       | TWA   | Time Weighted Average                                                                |
| ENCS   | Japan, Inventory of Existing and New Chemical Substances | TSCA  | Toxic Substance Control Act                                                          |
| KECI   | Korea, Existing Chemical Inventory                       | UVCB  | Unknown or Variable Composition, Complex Reaction Products, and Biological Materials |
| <=     | Less Than or Equal To                                    | WHMIS | Workplace Hazardous Materials Information System                                     |

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|      |                          |     |                         |
|------|--------------------------|-----|-------------------------|
| LC50 | Lethal Concentration 50% | ATE | Acute toxicity estimate |
|------|--------------------------|-----|-------------------------|