Toluene Standardization Fuel 96.9

Version 1.7 Revision Date 2026-10-26

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

Product information

Product Name	:	Toluene Standardization Fuel 96.9
Material	:	1024367, 1024366, 1024365, 1024364
Use	:	Reference Fuel
Company	:	Chevron Phillips Chemical Company LP Specialty Chemicals 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)
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 2
Skin irritation, Category 2
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) :



Signal Word : Danger

Hazard Statements : H225: Highly flammable liquid and vapor.
H304: May be fatal if swallowed and enters airways.
H315: Causes skin irritation.
H336: May cause drowsiness or dizziness.
H361d: Suspected of damaging 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:

IARC No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

NTP No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

SECTION 3: Composition/information on ingredients

Synonyms : Reference Fuel

Molecular formula : Mixture

Component	CAS-No.	Weight %

Toluene	108-88-3	73 - 75
n-Heptane	142-82-5	20 - 22
2,2,4-Trimethylpentane (Isooctane)	540-84-1	4 - 6

SECTION 4: First aid measures

General advice	:	Move out of dangerous area. Show this 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 be harmful if inhaled. May cause drowsiness or dizziness. Suspected of damaging 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. Suspected of damaging the unborn child. May cause damage to organs through prolonged or repeated exposure if inhaled.
Treatment	:	Treat symptomatically.

SECTION 5: Firefighting measures

Flash point	:	4°C (39°F) Method: closed cup estimated
Autoignition temperature	:	528.9°C (984.0°F)
Suitable extinguishing media	:	Alcohol-resistant foam. Carbon dioxide (CO2). Dry chemical.
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	:	Hydrocarbons. 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.
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.

Use : Reference Fuel

SECTION 8: Exposure controls/personal protection

Ingredients with workplace control parameters

US

Components	Basis	Value	Control parameters	Note
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	
n-Heptane	OSHA Z-1	TWA	500 ppm, 2,000 mg/m3	
	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,
2,2,4-Trimethylpentane (Isooctane)	ACGIH	TWA	300 ppm,	

A4 Not classifiable as a human carcinogen
OTO Ototoxicant

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 Concentration Value 500 parts per million	1995-03-01
n-Heptane	142-82-5	Immediately Dangerous to Life or Health Concentration Value 750 parts per million	1995-03-01
Toluene	108-88-3	Immediately Dangerous to Life or Health Concentration Value 500 parts per million	1995-03-01
n-Heptane	142-82-5	Immediately Dangerous to Life or Health Concentration Value 750 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
		o-Cresol: 0.3 mg/g creatinine Background (Urine) With hydrolyses ()	End of shift (As soon as possible after exposure ceases)	2010-03-01

Engineering measures

Adequate ventilation to control airborned 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 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	:	Non-viscous, liquid
Physical state	:	liquid
Color	:	Clear
Odor	:	Strong gasoline

Safety data

Flash point	:	4°C (39°F) Method: closed cup estimated

Lower explosion limit	:	1.1 %(V)
Upper explosion limit	:	7.1 %(V)
Oxidizing properties	:	No
Autoignition temperature	:	528.9°C (984.0°F)
Molecular formula	:	Mixture
Molecular weight	:	Not applicable
pH	:	Not applicable
Freezing point	:	-94.44°C (-137.99°F)
Pour point		No data available
Boiling point/boiling range	:	99°C (210°F)
Vapor pressure	:	30.00 MMHG estimated
Relative density	:	0.823 at 15.6 °C (60.1 °F)
Density	:	0.823 g/cm3
Water solubility	:	negligible
Partition coefficient: n-octanol/water	:	No data available
Viscosity, kinematic	:	No data available
Relative vapor density	:	3.2 (Air = 1.0)
Evaporation rate	:	4.5
Conductivity	:	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: Hazardous polymerization does not occur., Vapors may form explosive mixture with air.

Conditions to avoid : Heat, flames and sparks.

Materials to avoid : May react with oxygen and strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.

Hazardous decomposition products : Hydrocarbons
Carbon oxides

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

SECTION 11: Toxicological information

Toluene Standardization Fuel 96.9
Acute oral toxicity : Acute toxicity estimate: > 5,000 mg/kg
Method: Calculation method

Toluene Standardization Fuel 96.9
Acute inhalation toxicity : Acute toxicity estimate: > 20 mg/l
Exposure time: 4 h
Test atmosphere: vapor
Method: Calculation method

Acute toxicity estimate: 33.65 mg/l
Exposure time: 4 h
Test atmosphere: vapor
Method: Calculation method

Acute toxicity estimate: 24.78 mg/l
Exposure time: 4 h
Test atmosphere: vapor
Method: Calculation method

Toluene Standardization Fuel 96.9
Acute dermal toxicity : Acute toxicity estimate: > 5,000 mg/kg
Method: Calculation method

Acute toxicity estimate: > 5,000 mg/kg
Method: Calculation method

Toluene Standardization Fuel 96.9
Skin irritation : Skin irritation
largely based on animal evidence.
May cause skin irritation in susceptible persons.

Toluene Standardization Fuel 96.9
Eye irritation : Vapors may cause irritation to the eyes, respiratory system and the skin.
Vapors may cause irritation to the eyes, respiratory system and the skin.

Toluene Standardization Fuel 96.9

Sensitization : Does not cause skin sensitization.
largely based on animal evidence.

Repeated dose toxicity

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

n-Heptane Species: Rat, male
Sex: male
Application Route: Inhalation
Dose: 12.47 mg/l
Exposure time: 16 wk
Number of exposures: 12 h/d, 7 d/wk
NOEL: 12.47 mg/l
No adverse effect has been observed in chronic toxicity tests.

Species: Rat, Male and female
Sex: Male and female
Application Route: Inhalation
Dose: 12.35 mg/l
Exposure time: 26 wk
Number of exposures: 6 h/d, 5 d/wk
Method: OECD Test Guideline 413
No adverse effect has been observed in chronic toxicity tests.

2,2,4-Trimethylpentane (Isooctane) Species: Rat, Male and female
Sex: Male and female
Application Route: Inhalation
Dose: 0, 668, 2220, 6646 ppm
Exposure time: 13 weeks
Number of exposures: 6 hr/day 5 d/wk
NOEL: 8.117 mg/l 2220 ppm
Method: OECD Guideline 413
Information given is based on data obtained from similar substances.

Genotoxicity in vitro

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
n-Heptane	Test Type: Ames test Method: Mutagenicity (Escherichia coli - reverse mutation assay) Result: negative Test Type: Mammalian cell gene mutation assay Method: OECD Guideline 476 Result: negative Test Type: Chromosome aberration test in vitro Method: OECD Guideline 473 Result: negative Test Type: Mitotic recombination Result: negative
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

Genotoxicity in vivo

Toluene	:	Test Type: Cytogenetic assay Result: negative Test Type: Mouse micronucleus assay Result: negative
2,2,4-Trimethylpentane (Isooctane)		Test Type: Unscheduled DNA synthesis assay Species: Mouse Dose: 500 mg/kg Result: negative Test Type: Unscheduled DNA synthesis assay Species: Rat Dose: 500 mg/kg Result: negative

Carcinogenicity

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

Reproductive toxicity

Toluene	:	Species: Rat Application Route: Inhalation Dose: 0, 100, 500, 2000 ppm Test period: 95 d NOAEL Parent: 2000 ppm
n-Heptane		Species: Rat Sex: male and female Application Route: Inhalation Dose: 0, 900, 3000, 9000 ppm Number of exposures: 6 hr/d, 5 d/wk Test period: 13 wk Method: OECD Test Guideline 416 NOAEL Parent: 3000ppm NOAEL F1: 3000 ppm NOAEL F2: 3000 ppm Information given is based on data obtained from similar substances.
2,2,4-Trimethylpentane (Isooctane)		Species: Rat Sex: male and female Application Route: Inhalation Dose: 0, 900, 3000, 9000 ppm Number of exposures: 6 h/d 5 d/wk Method: OECD Test Guideline 416 NOAEL Parent: 3000 ppm NOAEL F1: 3000 ppm NOAEL F2: 3000 ppm Information given is based on data obtained from similar substances.

Developmental Toxicity

Toluene	:	Species: Rat Application Route: Inhalation Dose: 0, 100, 500, 2000 ppm Test period: 95 d NOAEL Teratogenicity: 400-750 ppm
n-Heptane		Species: Rat Application Route: Inhalation Dose: 0, 900, 3000, 9000 ppm Exposure time: GD6-15

	Number of exposures: 6 hrs/d NOAEL Teratogenicity: 9000 ppm NOAEL Maternal: 3000 ppm
2,2,4-Trimethylpentane (Isooctane)	Species: Rat Application Route: Inhalation Dose: 0, 400, 1200 ppm Number of exposures: 6h/d Test period: GD6-15 NOAEL Teratogenicity: 1200 ppm NOAEL Maternal: 1200 ppm Information given is based on data obtained from similar substances.
	Species: Rat Application Route: Inhalation Dose: 0, 900, 3000, 9000 ppm Number of exposures: 6h/d Test period: GD6-15 Method: OECD Guideline 414 NOAEL Teratogenicity: 9000 ppm NOAEL Maternal: 3000 ppm Information given is based on data obtained from similar substances.

Toluene Standardization Fuel 96.9

Aspiration toxicity : May be fatal if swallowed and enters airways.

CMR effects

Toluene	: Carcinogenicity: Not classifiable as a human carcinogen. Mutagenicity: Animal testing did not show any mutagenic effects. Teratogenicity: Some evidence of adverse effects on development, based on animal experiments. Reproductive toxicity: Some evidence of adverse effects on sexual function and fertility, and/or on development, based on animal experiments.
n-Heptane	Mutagenicity: Tests on bacterial or mammalian cell cultures did not show mutagenic effects. Teratogenicity: Animal testing did not show any effects on fetal development. Reproductive toxicity: No toxicity to reproduction
2,2,4-Trimethylpentane (Isooctane)	Mutagenicity: Tests on bacterial or mammalian cell cultures did not show mutagenic effects. Teratogenicity: Animal testing did not show any effects on fetal development. Reproductive toxicity: Animal testing did not show any effects on fertility.

Toluene Standardization Fuel 96.9

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

SECTION 12: Ecological information

Toxicity to fish

Toluene	:	LC50: 18 - 36 mg/l Exposure time: 96 h Species: Pimephales promelas (fathead minnow)
n-Heptane		LL50: 5.738 mg/l Exposure time: 96 h Species: Oncorhynchus mykiss (rainbow trout) Method: QSAR modeled data
2,2,4-Trimethylpentane (Isooctane)		LC50: 0.11 mg/l Exposure time: 96 h Species: Oncorhynchus mykiss (rainbow trout) semi-static test Method: OECD Test Guideline 203 Information given is based on data obtained from similar substances.

Toxicity to daphnia and other aquatic invertebrates

Toluene	:	EC50: 3.78 mg/l Exposure time: 48 h Species: Daphnia magna (Water flea)
n-Heptane		EC50: 1.5 mg/l Exposure time: 48 h Species: Daphnia magna (Water flea) static test Toxic to aquatic organisms. LC50: 0.1 mg/l Exposure time: 96 h Species: Mysidopsis bahia (mysid shrimp) semi-static test Very toxic to aquatic organisms.
2,2,4-Trimethylpentane (Isooctane)		EC50: 0.4 mg/l Exposure time: 48 h Species: Daphnia magna (Water flea) static test Information given is based on data obtained from similar substances.

Toxicity to algae

Toluene	:	EC50: 134 mg/l Exposure time: 72 h Species: Chlamydomonas angulosa (Green algae)
n-Heptane		EL50: 4.338 mg/l Exposure time: 72 h Species: Pseudokirchneriella subcapitata (microalgae) Method: QSAR
2,2,4-Trimethylpentane (Isooctane)		EL50: 2.943 mg/l Exposure time: 72 h Method: QSAR modeled data

Toxicity to fish (Chronic toxicity)

n-Heptane	:	NOELR: 1.284 mg/l Exposure time: 28 d Species: Oncorhynchus mykiss (rainbow trout) Method: QSAR modeled data

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)

2,2,4-Trimethylpentane (Isooctane)	:	NOEL: 0.17 mg/l Exposure time: 21 d Species: Daphnia magna (Water flea) Method: OECD Test Guideline 211 Information given is based on data obtained from similar substances.

Biodegradability

Toluene	:	This material is expected to be readily biodegradable.
n-Heptane	:	Result: Readily biodegradable. 70 % Testing period: 10 d
2,2,4-Trimethylpentane (Isooctane)	:	Result: Not readily biodegradable. Method: OECD Test Guideline 301 Expected to be inherently biodegradable. Information given is based on data obtained from similar substances.

Bioaccumulation

Toluene	:	This material is not expected to bioaccumulate.
n-Heptane	:	Bioconcentration factor (BCF): 552 Method: QSAR modeled data This material is not expected to bioaccumulate.
2,2,4-Trimethylpentane (Isooctane)	:	Bioconcentration factor (BCF): 231 Method: QSAR modeled data This material is not expected to bioaccumulate.

Mobility

Toluene	:	Not expected to adsorb on soil.
n-Heptane	:	Medium: Air Method: Calculation, Mackay Level I Fugacity Model Content: 100 % After release, disperses into the air.
2,2,4-Trimethylpentane (Isooctane)	:	Medium: Air Method: Calculation, Mackay Level I Fugacity Model After release, disperses into the air.

Results of PBT assessment

Toluene	:	Non-classified vPvB substance, Non-classified PBT substance
n-Heptane	:	Non-classified PBT substance, Non-classified vPvB substance
2,2,4-Trimethylpentane (Isooctane)	:	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

Toluene	:	Toxic to aquatic life.
n-Heptane	:	Very toxic to aquatic life.
2,2,4-Trimethylpentane (Isooctane)	:	Very toxic to aquatic life.

Long-term (chronic) aquatic hazard

Toluene	:	Harmful to aquatic life with long lasting effects.
n-Heptane	:	Very toxic to aquatic life with long lasting effects.
2,2,4-Trimethylpentane (Isooctane)	:	Very 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. 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)
UN1268, PETROLEUM PRODUCTS, N.O.S., 3, II, MARINE POLLUTANT, (HEPTANE, 2,2,4-TRIMETHYLPENTANE (ISOOCTANE))

IMO / IMDG (INTERNATIONAL MARITIME DANGEROUS GOODS)
UN1268, PETROLEUM PRODUCTS, N.O.S., 3, II, (4 °C c.c.), MARINE POLLUTANT, (HEPTANE, 2,2,4-TRIMETHYLPENTANE (ISOOCTANE))

IATA (INTERNATIONAL AIR TRANSPORT ASSOCIATION)
UN1268, PETROLEUM PRODUCTS, N.O.S., 3, II

ADR (AGREEMENT ON DANGEROUS GOODS BY ROAD (EUROPE))
UN1268, PETROLEUM PRODUCTS, N.O.S., 3, II, (D/E), ENVIRONMENTALLY HAZARDOUS, (HEPTANE, 2,2,4-TRIMETHYLPENTANE (ISOOCTANE))

RID (REGULATIONS CONCERNING THE INTERNATIONAL TRANSPORT OF DANGEROUS GOODS (EUROPE))
33,UN1268,PETROLEUM PRODUCTS, N.O.S., 3, II, ENVIRONMENTALLY HAZARDOUS, (HEPTANE, 2,2,4-TRIMETHYLPENTANE (ISOOCTANE))

ADN (EUROPEAN AGREEMENT CONCERNING THE INTERNATIONAL CARRIAGE OF DANGEROUS GOODS BY INLAND WATERWAYS)
UN1268, PETROLEUM PRODUCTS, N.O.S., 3, II, ENVIRONMENTALLY HAZARDOUS, (HEPTANE, 2,2,4-TRIMETHYLPENTANE (ISOOCTANE))

Maritime transport in bulk according to IMO instruments

SECTION 15: Regulatory information

National legislation

SARA 311/312 Hazards : Flammable (gases, aerosols, liquids, or solids)
Reproductive toxicity
Specific target organ toxicity (single or repeated exposure)
Aspiration hazard
Skin corrosion or irritation

EPCRA - EMERGENCY PLANNING COMMUNITY RIGHT - TO – KNOW

CERCLA Reportable Quantity : 1345 lbs

Toluene

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

SARA 304 Reportable Quantity : This material does not contain any components with a section 304 EHS RQ.

SARA 313 Components : The following components are subject to reporting levels established by SARA Title III, Section 313:
: Toluene - 108-88-3

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

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

The following chemical(s) are listed under the U.S. Clean Air Act Section 111 SOCMI Intermediate or Final VOC's (40 CFR 60.489):
: Toluene - 108-88-3

US State Regulations

Pennsylvania Right To Know
: Toluene - 108-88-3
n-Heptane - 142-82-5
2,2,4-Trimethylpentane (Isooctane) - 540-84-1
Benzene - 71-43-2

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.

Benzene	71-43-2

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.

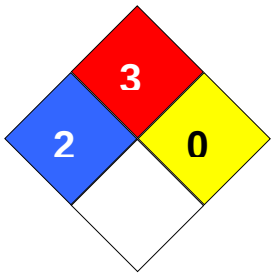
Toluene	108-88-3
Benzene	71-43-2

Notification status

Europe EU REACH	:	This mixture contains only ingredients which have been registered according to Regulation (EU) No. 1907/2006 (REACH).
Switzerland CH INV	:	On the inventory, or in compliance with the inventory
United States of America (USA) US TSCA	:	On or in compliance with the active portion of the TSCA inventory
Canada CA. DSL	:	All components of this product are on the Canadian DSL
Australia AU AIIC	:	On the inventory, or in compliance with the inventory
New Zealand NZ NZIoC	:	Not in compliance with the inventory
Japan JP ENCS	:	On the inventory, or in compliance with the inventory
Japan JP ISHL	:	On the inventory, or in compliance with the inventory
Korea KR KECI	:	A substance(s) in this product was not registered, notified to be registered, or exempted from registration by CPChem according to K-REACH regulations.
Philippines PH PICCS	:	On the inventory, or in compliance with the inventory
China CN IECSC	:	On the inventory, or in compliance with the inventory
Taiwan TW TCSI	:	On the inventory, or in compliance with the inventory

SECTION 16: Other information

NFPA Classification : Health Hazard: 2
Fire Hazard: 3
Reactivity Hazard: 0



Revision Date : 2026-10-26
Date of last issue : 2021-04-27

Print Date : 2026-11-05

Further information

Legacy SDS Number : 26820

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
LC50	Lethal Concentration 50%	ATE	Acute toxicity estimate