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

Product information
Product Name: PRF Octane No. Blends 80-98
Material: 1024452, 1024451, 1024450, 1024448, 1024447, 1024446, 1024444, 1024443, 1024442, 1024440, 1024439, 1024438, 1024436, 1024435, 1024434, 1024432, 1024431, 1024430, 1024428, 1024427, 1024426, 1024424, 1024423, 1024422, 1024420, 1024419, 1024418, 1024416, 1024415, 1024414, 1024412, 1024411, 1024410, 1024408, 1024407, 1024406, 1024404, 1024403, 1024402, 1024400, 1024399, 1024398, 1024396, 1024395, 1024394, 1024392, 1024391, 1024390, 1024388, 1024384, 1024383, 1024382, 1024381, 1024380, 1024379, 1024378, 1024376, 1024372, 1024341, 1024340, 1024339, 1024338, 1024337, 1024336, 1024335, 1024334, 1024333, 1024332, 1024331, 1024330, 1024328, 1024327, 1024326, 1024324, 1024323, 1024322, 1024320, 1024319, 1024318, 1024316, 1024315, 1024314, 1024313, 1024312, 1024311, 1024310, 1024308, 1024307, 1024306, 1024304, 1024303, 1024302, 1024300, 1024299, 1024298, 1024296, 1024295, 1024294, 1024292, 1024291, 1024290, 1024288, 1024284, 1024283, 1024282, 1024281, 1024280, 1024279, 1024278, 1024276, 1024272, 1024241, 1024240, 1024239, 1024238, 1024237, 1024236, 1024235, 1024234, 1024233, 1024232, 1024231, 1024230, 1024228, 1024227, 1024226, 1024224, 1024223, 1024222, 1024220, 1024219, 1024218, 1024216, 1024215, 1024214, 1024213, 1024212, 1024211, 1024210, 1024208, 1024207, 1024206, 1024204, 1024203, 1024202, 1024200, 1024199, 1024198, 1024196, 1024195, 1024194, 1024192, 1024191, 1024190, 1024188, 1024184, 1024183, 1024182, 1024181, 1024180, 1024179, 1024178, 1024176, 1024172, 1024141, 1024140, 1024139, 1024138, 1024137, 1024136, 1024135, 1024133, 1024132, 1024131, 1024130, 1024128, 1024127, 1024126, 1024124, 1024123, 1024122, 1024120, 1024119, 1024118, 1024116, 1024115, 1024114, 1024112, 1024111, 1024110, 1024108, 1024107, 1024106, 1024104, 1024103, 1024102, 1024100, 1024099, 1024098, 1024096, 1024095, 1024094, 1024092, 1024091, 1024090, 1024088, 1024084, 1024083, 1024082, 1024081, 1024080, 1024079, 1024078, 1024076, 1024072, 1024041, 1024040, 1024039, 1024038, 1024037, 1024036, 1024035, 1024034, 1024033, 1024032, 1024031, 1024030, 1024028, 1024027, 1024026, 1024024, 1024023, 1024022, 1024020, 1024019, 1024018, 1024016, 1024015, 1024014, 1024012, 1024011, 1024010, 1024008, 1024007, 1024006, 1024004, 1024003, 1024002, 1024000, 1024003, 1024001

Use: Reference Fuel
Company: Chevron Phillips Chemical Company LP
Specialty Chemicals
10001 Six Pines Drive
The Woodlands, TX 77380

Local: CHEVRON PHILLIPS CHEMICALS ASIA PTE. LTD.
C/O DONG WOO CORPORATION
#B-2601,JEONGJAIL-RO,
BUNDANG-GU,SEONGNAMI-SI,
GYEONGGI-DO,13557
SOUTH KOREA
Telephone no.: +612-9186-1132

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

SDS Number:100000014260  1/15
SECTION 2: Hazards identification

**Classification of the substance or mixture**

Standards for classification and labeling of chemical substances and material safety data sheet (ministry of employment and labor public notice No. 2016-19) (GHS 2011)

**Classification**

- Flammable liquids, Category 2
- Skin corrosion/irritation, Category 2
- Serious eye damage/eye irritation, Category 2
- Specific target organ systemic toxicity - single exposure, Category 3, Respiratory system, Central nervous system
- Specific target organ systemic toxicity - repeated exposure, Category 2, Liver
- Aspiration hazard, Category 1
- Short-term (acute) aquatic hazard, Category 1
- Long-term (chronic) aquatic hazard, Category 1

**Labeling**

**Symbol(s):**

- Flame
- Person with face protection
- Exclamation mark
- Tree

**Signal Word:** Danger

**Hazard Statements:**

- H225: Highly flammable liquid and vapor.
- H304: May be fatal if swallowed and enters airways.
- H315: Causes skin irritation.
- H319: Causes serious eye irritation.
- H335: May cause respiratory irritation.
- H336: May cause drowsiness or dizziness.
- H373: May cause damage to organs (Liver) through prolonged or repeated exposure.
- H400: Very toxic to aquatic life.
- H410: Very toxic to aquatic life with long lasting effects.

**Precautionary Statements:**

**Prevention:**

- P210: Keep away from heat/sparks/open flames/hot surfaces. No smoking.
- P233: Keep container tightly closed.
- P240: Ground/bond container and receiving equipment.
- P241: Use explosion-proof electrical/ ventilating/ lighting/ equipment.
- P242: Use only non-sparking tools.
- P243: Take precautionary measures against static discharge.
- P260: Do not breathe dust/fume/gas/mist/vapor/spray.
- P273: Avoid release to the environment.
- P280: Wear protective gloves/ eye protection/ face protection.
Response:
P301 + P310: IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
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 victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.
P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P314: Get medical advice/attention if you feel unwell.
P321: Specific treatment (see supplemental first aid instructions on this label).
P331: Do NOT induce vomiting.
P337 + P313: If eye irritation persists: 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.
P391: Collect spillage.

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 and container according to wastes control act.

SECTION 3: Composition/information on ingredients

<table>
<thead>
<tr>
<th>Synonyms</th>
<th>Molecular formula</th>
<th>Chemical name</th>
<th>CAS-No.</th>
<th>Concentration</th>
<th>KECl Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary Reference Fuel</td>
<td>Mixture</td>
<td>2,2,4-Trimethylpentane (Isooctane)</td>
<td>540-84-1</td>
<td>80% - 98%</td>
<td>KE-34634</td>
</tr>
<tr>
<td>Octane Reference Fuel</td>
<td></td>
<td>n-Heptane</td>
<td>142-82-5</td>
<td>0% - 20%</td>
<td>KE-18271</td>
</tr>
</tbody>
</table>

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.
### SECTION 5: Firefighting measures

<table>
<thead>
<tr>
<th>Flash point</th>
<th>-8 °C (18 °F)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Method: Tag closed cup</td>
<td></td>
</tr>
</tbody>
</table>

| Autoignition temperature            | No data available |

<table>
<thead>
<tr>
<th>Suitable extinguishing media</th>
<th>Alcohol-resistant foam. Carbon dioxide (CO2). Dry chemical.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unsuitable extinguishing media</td>
<td>High volume water jet.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Specific hazards during fire fighting</th>
<th>Do not allow run-off from fire fighting to enter drains or water courses.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Special protective equipment for fire-fighters</th>
<th>Wear self-contained breathing apparatus for firefighting if necessary.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Further information</th>
<th>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.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Fire and explosion protection</th>
<th>Do not spray on an open flame or any other 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.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Hazardous decomposition products</th>
<th>Carbon oxides.</th>
</tr>
</thead>
</table>

### SECTION 6: Accidental release measures

<table>
<thead>
<tr>
<th>Personal precautions</th>
<th>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.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Environmental precautions</th>
<th>Prevent product from entering drains. Prevent further leakage</th>
</tr>
</thead>
</table>
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 an open flame or any other 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

<table>
<thead>
<tr>
<th>Components</th>
<th>Basis</th>
<th>Value</th>
<th>Control parameters</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>n-Heptane</td>
<td>KR OEL TWA</td>
<td>400 ppm.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>KR OEL STEL</td>
<td>500 ppm.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

SDS Number: 100000014260 5/15
Respiratory protection: Wear a supplied-air NIOSH approved respirator unless ventilation or other engineering controls are adequate to maintain minimal oxygen content of 19.5% by volume under normal atmospheric pressure. Wear a NIOSH approved respirator that provides protection when working with this material if exposure to harmful levels of airborne material may occur, such as: Air-Purifying Respirator for Organic Vapors. Full-Face Air-Purifying Respirator for Organic Vapors, Dusts and Mists. Use a positive pressure, air-supplying respirator if there is potential for uncontrolled release, 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
Physical state: Liquid
Color: Colorless
Odor: gasoline-like

Safety data
Flash point: -8 °C (18 °F)
Method: Tag closed cup
Lower explosion limit: 1 %(V)
Upper explosion limit: 7 %(V)
Oxidizing properties: No
Autoignition temperature: No data available
Molecular formula: Mixture
Molecular weight: Not applicable
pH : Not applicable
Freezing point : No data available
Pour point : No data available
Boiling point/boiling range : 96 - 103 °C (205 - 217 °F)
Vapor pressure : 1.70 PSI
at 37.8 °C (100.0 °F)
Relative density : 0.693
at 15.6 °C (60.1 °F)
Water solubility : Negligible
Partition coefficient: n-octanol/water : No data available
Viscosity, kinematic : No data available
Relative vapor density : 3
(Air = 1.0)
Evaporation rate : 1
Percent volatile : > 99 %

SECTION 10: Stability and reactivity

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.
Further information: No decomposition if stored and applied as directed.
Hazardous reactions: 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 : Carbon oxides
Other data: No decomposition if stored and applied as directed.

SECTION 11: Toxicological information

PRF Octane No. Blends 80-98
Acute oral toxicity: LD50: > 5,000 mg/kg
Species: Rat
Method: Acute toxicity estimate

PRF Octane No. Blends 80-98
Acute inhalation toxicity: LC50: > 20 mg/l
Species: Rat
Test atmosphere: dust/mist
Method: Acute toxicity estimate

PRF Octane No. Blends 80-98
Acute dermal toxicity: LD50: > 2,000 mg/kg
Species: Rabbit
Method: Acute toxicity estimate

PRF Octane No. Blends 80-98
Skin irritation: Skin irritation

PRF Octane No. Blends 80-98
Eye irritation: Vapors may cause irritation to the eyes, respiratory system and the skin.

PRF Octane No. Blends 80-98
Sensitization: Did not cause sensitization on laboratory animals.

Repeated dose toxicity
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.

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.

Reproductive toxicity

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.

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: 9000 ppm  
NOAEL F1: 3000 ppm  
NOAEL F2: 3000 ppm  
Information given is based on data obtained from similar substances.

Developmental Toxicity

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.
SAFETY DATA SHEET

PRF Octane No. Blends 80-98

Version 1.11
Revision Date 2018-08-20

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.

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

PRF Octane No. Blends 80-98
Aspiration toxicity: May be fatal if swallowed and enters airways.

CMR effects
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.

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

PRF Octane No. Blends 80-98
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
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.

n-Heptane
LL50: 5.738 mg/l
Exposure time: 96 h
Species: Oncorhynchus mykiss (rainbow trout)
Method: QSAR modeled data

Toxicity to daphnia and other aquatic invertebrates

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.

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: Mysisopsis bahia (mysid shrimp)
semi-static test Very toxic to aquatic organisms.

Toxicity to algae

2,2,4-Trimethylpentane (Isooctane): EL50: 2.943 mg/l
Exposure time: 72 h
Method: QSAR modeled data

n-Heptane
EL50: 4.338 mg/l
Exposure time: 72 h
Species: Pseudokirchneriella subcapitata (microalgae)
Method: QSAR

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

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
n-Heptane : Result: Readily biodegradable. 70%  
Testing period: 10 d

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

Additional ecological information  
Ecotoxicology Assessment  
Short-term (acute) aquatic hazard  
2,2,4-Trimethylpentane (Isooctane) : Very toxic to aquatic life.  
n-Heptane : Very toxic to aquatic life.

Long-term (chronic) aquatic hazard  
2,2,4-Trimethylpentane (Isooctane) : Very toxic to aquatic life with long lasting effects.  
n-Heptane : 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 DISTILLATES, N.O.S., 3, II, MARINE POLLUTANT, (2,2,4-TRIMETHYLPENTANE (ISOOCTANE), N-HEPTANE)

**IMO / IMDG (INTERNATIONAL MARITIME DANGEROUS GOODS)**
UN1268, PETROLEUM DISTILLATES, N.O.S., 3, II, (-8 °C), MARINE POLLUTANT, (2,2,4-TRIMETHYLPENTANE (ISOOCTANE), N-HEPTANE)

**IATA (INTERNATIONAL AIR TRANSPORT ASSOCIATION)**
UN1268, PETROLEUM DISTILLATES, 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, (2,2,4-TRIMETHYLPENTANE (ISOOCTANE), N-HEPTANE)

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

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

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

### SECTION 15: Regulatory information

#### National legislation

**Regulation under the Occupational Safety and Health Act**
A Material Safety Datasheet (MSDS) for this product is not required according to article 41 of the ISHA.

<table>
<thead>
<tr>
<th>Regulation</th>
<th>Chemical name</th>
<th>Threshold limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Harmful Substances Prohibited from Manufacturing</td>
<td>:</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Harmful Substances Required Permission for Manufacture</td>
<td>:</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>

**Act on the Registration and Evaluation, etc. of Chemical Substances, Chemicals Control Act**

<table>
<thead>
<tr>
<th>Regulation</th>
<th>Chemical name</th>
<th>Threshold limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toxic Chemicals</td>
<td>:</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Prohibited Chemicals</td>
<td>:</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>
Restricted Chemicals: Not applicable
Toxic Release Inventory: Not applicable

Dangerous Substances Safety Management Act
Dangerous Substances: Flammable liquids, Type 1 petroleums, Water insoluble liquid
Safety Management Act

Notification status
Europe REACH: On the inventory, or in compliance with the inventory
United States of America (USA) TSCA: On the inventory, or in compliance with the inventory
Australia AICS: On the inventory, or in compliance with the inventory
New Zealand NZIoC: On the inventory, or in compliance with the inventory
Japan ENCS: On the inventory, or in compliance with the inventory
Korea KECl: On the inventory, or in compliance with the inventory
Philippines PICCS: On the inventory, or in compliance with the inventory
China IECSC: On the inventory, or in compliance with the inventory

SECTION 16: Other information

Further information
Legacy SDS Number: 28440

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

<table>
<thead>
<tr>
<th>ACGIH</th>
<th>American Conference of Government Industrial Hygienists</th>
<th>LD50</th>
<th>Lethal Dose 50%</th>
</tr>
</thead>
<tbody>
<tr>
<td>AICS</td>
<td>Australia, Inventory of Chemical Substances</td>
<td>LOAEL</td>
<td>Lowest Observed Adverse Effect Level</td>
</tr>
<tr>
<td>DSL</td>
<td>Canada, Domestic Substances List</td>
<td>NFPA</td>
<td>National Fire Protection Agency</td>
</tr>
<tr>
<td>NDSL</td>
<td>Canada, Non-Domestic Substances List</td>
<td>NIOSH</td>
<td>National Institute for Occupational Safety &amp; Health</td>
</tr>
<tr>
<td>CNS</td>
<td>Central Nervous System</td>
<td>NTP</td>
<td>National Toxicology Program</td>
</tr>
<tr>
<td>CAS</td>
<td>Chemical Abstract Service</td>
<td>NZIoC</td>
<td>New Zealand Inventory of Chemicals</td>
</tr>
<tr>
<td>EC50</td>
<td>Effective Concentration</td>
<td>NOAEL</td>
<td>No Observable Adverse Effect Level</td>
</tr>
<tr>
<td>EC50</td>
<td>Effective Concentration 50%</td>
<td>NOEC</td>
<td>No Observed Effect Concentration</td>
</tr>
<tr>
<td>EGEST</td>
<td>EOSCA Generic Exposure Scenario Tool</td>
<td>OSHA</td>
<td>Occupational Safety &amp; Health Administration</td>
</tr>
<tr>
<td>EOSCA</td>
<td>European Oilfield Specialty Chemicals Association</td>
<td>PEL</td>
<td>Permissible Exposure Limit</td>
</tr>
<tr>
<td>EINECS</td>
<td>European Inventory of Existing Chemical Substances</td>
<td>PICCS</td>
<td>Philippines Inventory of Commercial Chemical Substances</td>
</tr>
<tr>
<td>MAK</td>
<td>Germany Maximum Concentration Values</td>
<td>PRNT</td>
<td>Presumed Not Toxic</td>
</tr>
<tr>
<td>--------------</td>
<td>--------------------------------------</td>
<td>---------------</td>
<td>--------------------</td>
</tr>
<tr>
<td>GHS</td>
<td>Globally Harmonized System</td>
<td>RCRA</td>
<td>Resource Conservation Recovery Act</td>
</tr>
<tr>
<td>&gt;=</td>
<td>Greater Than or Equal To</td>
<td>STEL</td>
<td>Short-term Exposure Limit</td>
</tr>
<tr>
<td>IC50</td>
<td>Inhibition Concentration 50%</td>
<td>SARA</td>
<td>Superfund Amendments and Reauthorization Act</td>
</tr>
<tr>
<td>IARC</td>
<td>International Agency for Research on Cancer</td>
<td>TLV</td>
<td>Threshold Limit Value</td>
</tr>
<tr>
<td>IECSC</td>
<td>Inventory of Existing Chemical Substances in China</td>
<td>TWA</td>
<td>Time Weighted Average</td>
</tr>
<tr>
<td>ENCS</td>
<td>Japan, Inventory of Existing and New Chemical Substances</td>
<td>TSCA</td>
<td>Toxic Substance Control Act</td>
</tr>
<tr>
<td>KECI</td>
<td>Korea, Existing Chemical Inventory</td>
<td>UVCB</td>
<td>Unknown or Variable Composition, Complex Reaction Products, and Biological Materials</td>
</tr>
<tr>
<td>&lt;=</td>
<td>Less Than or Equal To</td>
<td>WHMIS</td>
<td>Workplace Hazardous Materials Information System</td>
</tr>
<tr>
<td>LC50</td>
<td>Lethal Concentration 50%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>