

### SECTION 1: Identification

#### 1.1. Identification

Product form : Mixture  
Trade name : TMC Reference Fluid DFLUB  
Product code : DFA & DFB

#### 1.2. Recommended use and restrictions on use

Recommended use : Research fluid for instrument performance verification  
Restrictions on use : All other uses not recommended above

#### 1.3. Supplier

Test Monitoring Center  
203 Armstrong Dr.  
Freeport, 16229  
Pennsylvania  
T 412-365-1000  
[ghs-sds@astmtmc.org](mailto:ghs-sds@astmtmc.org)

#### 1.4. Emergency telephone number

Emergency number : For Hazardous Materials or Dangerous Goods Incident Spill, Leak, Fire, Exposure, Transport or Accident Call CHEMTREC Day or Night: 1-800-424-9300 (Toll Free, USA) / 703-527-3887 (Virginia, USA) CCN 1004806

### SECTION 2: Hazard(s) identification

#### 2.1. Classification of the substance or mixture

##### GHS US classification

Flammable liquids Category 4	Combustible liquid
Skin corrosion/irritation Category 2	Causes skin irritation
Serious eye damage/eye irritation Category 2B	Causes eye irritation
Germ cell mutagenicity Category 1B	May cause genetic defects
Carcinogenicity Category 1B	May cause cancer (Inhalation)
Reproductive toxicity Category 2	Suspected of damaging fertility or the unborn child
Specific target organ toxicity – Single exposure, Category 3, Narcosis	May cause drowsiness or dizziness
Specific target organ toxicity (repeated exposure) Category 2	May cause damage to organs (nervous system) through prolonged or repeated exposure (Inhalation)
Aspiration hazard Category 1	May be fatal if swallowed and enters airways

Full text of H statements : see section 16

#### 2.2. GHS Label elements, including precautionary statements

##### GHS US labeling

Hazard pictograms (GHS US) :



Signal word (GHS US) : Danger  
Hazard statements (GHS US) : Combustible liquid  
May be fatal if swallowed and enters airways  
Causes skin irritation

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Precautionary statements (GHS US)	<p>Causes eye irritation May cause drowsiness or dizziness May cause genetic defects May cause cancer (Inhalation) Suspected of damaging fertility or the unborn child May cause damage to organs (nervous system) through prolonged or repeated exposure (Inhalation)</p> <p>: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Do not breathe mist, spray, vapors. Wash hands, forearms and face thoroughly after handling. Use only outdoors or in a well-ventilated area. Wear protective gloves, protective clothing, eye protection, face protection. If swallowed: Immediately call a poison center or doctor. Do NOT induce vomiting. If on skin: Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash it before reuse. If inhaled: Remove person to fresh air and keep comfortable for breathing. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention. If exposed or concerned: Get medical advice/attention. Call a poison center or doctor if you feel unwell. In case of fire: Use Dry chemical, CO<sub>2</sub>, or water spray or regular foam to extinguish. Store in a well-ventilated place. Keep container tightly closed. Keep cool. Store locked up. Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.</p>
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### 2.3. Other hazards which do not result in classification

No additional information available

### 2.4. Unknown acute toxicity (GHS US)

No additional information available

## SECTION 3: Composition/Information on ingredients

### 3.1. Substances

Not applicable

### 3.2. Mixtures

Name	Product identifier	%	GHS US classification
Petroleum Distillates	CAS-No.: 8002-05-9	70 – 80	Flam. Liq. 2, H225 Skin Irrit. 2, H315 Eye Irrit. 2B, H320 Muta. 1B, H340 Carc. 1B, H350 STOT SE 3, H336 Asp. Tox. 1, H304 Aquatic Chronic 1, H410

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Name	Product identifier	%	GHS US classification
Isoparaffinic Hydrocarbon	CAS-No.: 64742-47-8	5 – 15	Asp. Tox. 1, H304
Solvent Naphtha (Petroleum), Heavy Aromatic	CAS-No.: 64742-94-5	5 – 15	Asp. Tox. 1, H304 Aquatic Chronic 2, H411
Hydrocarbons, C9, aromatics	CAS-No.: 64742-95-6	1 – 5	Flam. Liq. 2, H225 Muta. 1B, H340 Carc. 1B, H350 Asp. Tox. 1, H304
Xylene	CAS-No.: 1330-20-7	1 – 4	Flam. Liq. 3, H226 Skin Irrit. 2, H315 Aquatic Acute 2, H401
Naphthalene	CAS-No.: 91-20-3	1 – 3	Acute Tox. 4 (Oral), H302 Carc. 2, H351 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
Hexane	CAS-No.: 110-54-3	1 – 2	Flam. Liq. 2, H225 Skin Irrit. 2, H315 Repr. 2, H361 STOT SE 3, H336 STOT RE 2, H373 Asp. Tox. 1, H304 Aquatic Chronic 2, H411
Heptane	CAS-No.: 142-82-5	1 – 2	Flam. Liq. 2, H225 Skin Irrit. 2, H315 STOT SE 3, H336 Asp. Tox. 1, H304 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
Benzene, trimethyl-	CAS-No.: 25551-13-7	1 – 2	Flam. Liq. 3, H226 Skin Irrit. 2, H315 Eye Irrit. 2A, H319
1,2,4 Trimethylbenzene	CAS-No.: 95-63-6	1 – 2	Flam. Liq. 3, H226 Acute Tox. 4 (Inhalation), H332 Skin Irrit. 2, H315 Eye Irrit. 2A, H319 STOT SE 3, H335 Aquatic Chronic 2, H411
1,3,5-Trimethylbenzene	CAS-No.: 108-67-8	1 – 2	Flam. Liq. 3, H226 STOT SE 3, H335 Aquatic Chronic 2, H411
Cumene	CAS-No.: 98-82-8	1 – 2	Flam. Liq. 3, H226 Acute Tox. 4 (Oral), H302 Acute Tox. 3 (Inhalation), H331 Carc. 2, H351 STOT SE 3, H335 Asp. Tox. 1, H304 Aquatic Chronic 2, H411

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Name	Product identifier	%	GHS US classification
Octane	CAS-No.: 111-65-9	1 – 2	Flam. Liq. 2, H225 Skin Irrit. 2, H315 STOT SE 3, H336 Asp. Tox. 1, H304 Aquatic Acute 1, H400 Aquatic Chronic 1, H410

Full text of hazard classes and H-statements : see section 16

### SECTION 4: First-aid measures

#### 4.1. Description of first aid measures

- First-aid measures general : Call a physician immediately. First aider: Pay attention to self-protection. Never give anything by mouth to an unconscious person. Give artificial respiration if necessary. Induce artificial respiration with mask fitted with one-way valve or other suitable device but not mouth-to-mouth.
- First-aid measures after inhalation : Call a physician immediately. If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. If the victim is unconscious : Lay in a stable manner on victim's side. Induce artificial respiration with mask fitted with one-way valve or other suitable device; not mouth-to-mouth.
- First-aid measures after skin contact : Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse. If skin irritation occurs: Get medical advice/attention. Wash contaminated clothing before reuse.
- First-aid measures after eye contact : IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
- First-aid measures after ingestion : Call a physician immediately. Do NOT induce vomiting. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs.

#### 4.2. Most important symptoms and effects (acute and delayed)

- Symptoms/effects after inhalation : Aspiration of the product into the lungs may cause very serious pneumonia. Depression of the central nervous system, headaches, dizziness, drowsiness, loss of coordination.
- Symptoms/effects after skin contact : Irritation (itching, redness, blistering).
- Symptoms/effects after eye contact : Mild eye irritation. Redness, itching, tears.
- Symptoms/effects after ingestion : May be fatal if swallowed and enters airways. Risk of lung edema.
- Most Important Symptoms/Effects : Risk of product entering the lungs on vomiting after ingestion. Pulmonary edema.
- Chronic symptoms : Causes damage to organs (nervous system) through prolonged or repeated exposure (Inhalation). Prolonged and frequent exposure through inhalation may cause cancer. May cause genetic defects. Suspected of damaging fertility or the unborn child.

#### 4.3. Immediate medical attention and special treatment, if necessary

IF exposed: Call a POISON CENTER or doctor/physician.

### SECTION 5: Fire-fighting measures

#### 5.1. Suitable (and unsuitable) extinguishing media

- Suitable extinguishing media : Dry chemical, CO<sub>2</sub>, or water spray or regular foam.
- Unsuitable extinguishing media : Do not use a heavy water stream.

#### 5.2. Specific hazards arising from the chemical

- Fire hazard : Combustible liquid.
- Hazardous decomposition products in case of fire : Toxic fumes may be released. Carbon dioxide. Carbon monoxide.

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### 5.3. Special protective equipment and precautions for fire-fighters

- Firefighting instructions : In case of fire: Evacuate area. Fight fire remotely due to the risk of explosion. Large fires: Fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Do not enter fire area without proper protective equipment, including respiratory protection. ALWAYS stay away from tanks engulfed in fire. Withdraw immediately in case of rising sound from venting devices or discoloration from tank. Cool affected containers with flooding quantities of water. Prevent fire-fighting water from entering environment.
- Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

- General measures : Avoid all personal contact including breathing in the mist, spray, vapors. Do not take actions involving personal risks. Absorb spillage to prevent material-damage. Stop leak if safe to do so. Notify authorities if product enters sewers or public waters.

#### 6.1.1. For non-emergency personnel

- Protective equipment : Wear recommended personal protective equipment.
- Emergency procedures : Evacuate the danger area. If outdoors, move to an area upwind of the danger area. Prevent other non-emergency personnel from entering the danger area. If possible without taking personal risks, remove ignition sources, ventilate area. No open flames, no sparks, and no smoking. Only qualified personnel equipped with suitable protective equipment may intervene. Do not breathe mist, spray, vapors.

#### 6.1.2. For emergency responders

- Protective equipment : Wear the recommended personal protective equipment. Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".
- Emergency procedures : Evacuate personnel to a safe area. Do not touch spilled material. Ventilate spillage area. Remove all sources of ignition. Stop leak if safe to do so. Prevent from entering sewers, basements and workpits, or any place where its accumulation can be dangerous.

### 6.2. Environmental precautions

Do not let the product reach soil, drains, sewers, or surface and ground water.

### 6.3. Methods and material for containment and cleaning up

- For containment : Contain with non-combustible inert absorbent. Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams. Stop leak, if possible without risk.
- Methods for cleaning up : Take up in non-combustible inert absorbent and place into container for disposal. Contaminated absorbent material may pose the same hazard as the spilt product. Decontaminate surfaces and equipment with water and detergent. Until a sufficient level of dilution is achieved, the decontamination water may pose the same hazards as the product. Dispose of collected material as soon as possible in accordance with applicable local/regional/national/international regulations.

### 6.4. Reference to other sections

For further information refer to section 8: "Exposure controls/personal protection". For further information refer to section 13.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

- Additional hazards when processed : Proper grounding procedures to avoid static electricity should be followed.

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Precautions for safe handling	: Ensure good ventilation of the work station. Use only outdoors or in a well-ventilated area. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Wear personal protective equipment. Do not breathe mist, spray, vapors. Avoid contact with skin, eyes and clothing. Take precautionary measures against static discharge.
Hygiene measures	: Do not eat, drink or smoke when using this product. Always wash hands after handling the product. Separate working clothes from town clothes. Launder separately. Wash contaminated clothing before reuse.

### 7.2. Conditions for safe storage, including any incompatibilities

Storage conditions	: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Store in a cool, dry, and well-ventilated area away from incompatible substances. Store in a secure location. Protect from sunlight. Do not expose to temperatures exceeding 50°C/122°F. Keep away from heat, hot surfaces, sparks, open flames, and other ignition sources. No smoking. Protect from sunlight. Keep container tightly closed. Use explosion-proof equipment.
Incompatible materials	: Strong oxidizing agents. Strong reducing agents.
Packaging materials	: Store always product in container of same material as original container.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

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No additional information available

#### Petroleum Distillates (8002-05-9)

##### USA - OSHA - Occupational Exposure Limits

OSHA PEL TWA	2000 mg/m <sup>3</sup>
	500 ppm

#### Isoparaffinic Hydrocarbon (64742-47-8)

No additional information available

#### Solvent Naphtha (Petroleum), Heavy Aromatic (64742-94-5)

No additional information available

#### Hydrocarbons, C9, aromatics (64742-95-6)

No additional information available

#### Xylene (1330-20-7)

##### USA - ACGIH - Occupational Exposure Limits

Local name	Xylene, mixed isomers (Dimethylbenzene)
ACGIH OEL TWA	20 ppm
Remark (ACGIH)	TLV® Basis: URT & eye irr; hematologic eff; ototoxicity (for mixtures containing p-xylene); CNS impair. Notations: OTO (for mixtures containing p-xylene); A4 (Not classifiable as a Human Carcinogen); BEI
Regulatory reference	ACGIH 2024

##### USA - ACGIH - Biological Exposure Indices

Local name	Xylenes (technical or commercial grade)
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<b>Xylene (1330-20-7)</b>	
BEI	0.3 g/g Kreatinin Parameter: Methylhippuric acids (The determinants refer to the total of all isomers of methylhippuric acids) - Medium: urine - Sampling time: End of shift
Remark	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
Regulatory reference	ACGIH 2024
<b>USA - OSHA - Occupational Exposure Limits</b>	
Local name	Xylenes (o-, m-, p-isomers)
OSHA PEL TWA	435 mg/m <sup>3</sup> 100 ppm
Regulatory reference (US-OSHA)	OSHA Annotated Table Z-1
<b>Naphthalene (91-20-3)</b>	
<b>USA - ACGIH - Occupational Exposure Limits</b>	
Local name	Naphthalene
ACGIH OEL TWA	10 ppm
Remark (ACGIH)	TLV® Basis: URT irr; cararacts; hemolytic anemia. Notations: Skin; A3 (Confirmed Animal Carcinogen with Unknown Relevance to Humans); BEI
Regulatory reference	ACGIH 2024
<b>USA - ACGIH - Biological Exposure Indices</b>	
Local name	Naphthalene
BEI	Parameter: 1-Naphthol + 2-Naphthol (with hydrolysis) - Sampling time: End of shift - Notations: Nq, Ns
Regulatory reference	ACGIH 2024
<b>USA - OSHA - Occupational Exposure Limits</b>	
Local name	Naphthalene
OSHA PEL TWA	50 mg/m <sup>3</sup> 10 ppm
Regulatory reference (US-OSHA)	OSHA Annotated Table Z-1
<b>Hexane (110-54-3)</b>	
<b>USA - ACGIH - Occupational Exposure Limits</b>	
ACGIH OEL TWA	50 ppm Skin - potential significant contribution to overall exposure by the cutaneous route
<b>USA - OSHA - Occupational Exposure Limits</b>	
OSHA PEL TWA	1800 mg/m <sup>3</sup> 500 ppm

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<b>Heptane (142-82-5)</b>	
<b>USA - ACGIH - Occupational Exposure Limits</b>	
ACGIH OEL TWA	400 ppm
ACGIH OEL STEL	500 ppm
<b>USA - OSHA - Occupational Exposure Limits</b>	
OSHA PEL TWA	2400 mg/m <sup>3</sup>
	500 ppm
<b>Benzene, trimethyl- (25551-13-7)</b>	
No additional information available	
<b>1,2,4 Trimethylbenzene (95-63-6)</b>	
No additional information available	
<b>1,3,5-Trimethylbenzene (108-67-8)</b>	
<b>USA - ACGIH - Occupational Exposure Limits</b>	
Local name	1,3,5-Trimethyl benzene
ACGIH OEL TWA	10 ppm
Remark (ACGIH)	TLV® Basis: CNS impair; hematologic eff
Regulatory reference	ACGIH 2024
<b>Cumene (98-82-8)</b>	
No additional information available	
<b>Octane (111-65-9)</b>	
<b>USA - OSHA - Occupational Exposure Limits</b>	
Local name	Octane
OSHA PEL TWA	2350 mg/m <sup>3</sup>
	500 ppm
Regulatory reference (US-OSHA)	OSHA Annotated Table Z-1
<b>8.2. Appropriate engineering controls</b>	
Appropriate engineering controls	: Ensure good ventilation of the work station. Use general ventilation, local exhaust ventilation, or process enclosure to keep the airborne concentrations below the permissible exposure limits. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.
Environmental exposure controls	: Avoid release to the environment. Take measures to reduce or limit air emissions and releases to soil and the aquatic environment.
<b>8.3. Individual protection measures/Personal protective equipment</b>	
<b>Personal protective equipment:</b> Personal protective equipment should be chosen according to national standards and in discussion with the supplier of the protective equipment. Wear recommended personal protective equipment.	
<b>Materials for protective clothing:</b> Wear suitable protective clothing. Flame retardant antistatic protective clothing	



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### Hand protection:

Wear protective gloves. Wear suitable gloves resistant to chemical penetration

### Eye protection:

Wear safety glasses which protect from splashes

### Skin and body protection:

Wear suitable protective clothing

### Respiratory protection:

[In case of inadequate ventilation] wear respiratory protection. Self-contained breathing apparatus

### Personal protective equipment symbol(s):



## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Physical state	: Liquid.
Appearance	: Clear liquid.
Color	: Pale yellow
Odor	: Mild
Odor threshold	: No data available
pH	: No data available
Melting point	: Not applicable
Freezing point	: No data available
Boiling point	: 140 – 350 °C (284 - 662 °F)
Flash point	: > 60 °C (140 °F)
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability (solid, gas)	: Not applicable.
Vapor pressure	: No data available
Relative vapor density at 20°C	: No data available
Relative density	: No data available
Solubility	: No data available
Partition coefficient n-octanol/water (Log Pow)	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosion limits	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available

### 9.2. Other information

No additional information available

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### SECTION 10: Stability and reactivity

#### 10.1. Reactivity

Combustible liquid.

#### 10.2. Chemical stability

Stable under normal conditions of use.

#### 10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

#### 10.4. Conditions to avoid

Avoid contact with hot surfaces. Heat. No flames, no sparks. Eliminate all sources of ignition. Incompatible materials.

#### 10.5. Incompatible materials

Strong oxidizing agents. Strong reducing agents.

#### 10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced. Thermal decomposition generates: Carbon dioxide. Carbon monoxide.

### SECTION 11: Toxicological information

#### 11.1. Information on toxicological effects

Acute toxicity (oral) : Not classified.  
Acute toxicity (dermal) : Not classified.  
Acute toxicity (inhalation) :

##### Petroleum Distillates

LD50 oral rat	> 5000 mg/kg
LD50 dermal rabbit	> 2000 mg/kg

##### Isoparaffinic Hydrocarbon

LD50 oral rat	> 5000 mg/kg body weight
LD50 dermal rabbit	> 2000 mg/kg body weight
LC50 Inhalation - Rat	> 5.28 mg/l air

##### Solvent Naphtha (Petroleum), Heavy Aromatic

LD50 dermal rat	> 2000 mg/kg body weight
LD50 dermal rabbit	> 2000 mg/kg body weight

##### Hydrocarbons, C9, aromatics

LD50 oral rat	> 5000 mg/kg body weight
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##### Xylene

LD50 oral rat	3523 mg/kg
LD50 dermal rabbit	> 2000 mg/kg
LC50 Inhalation - Rat	29000 mg/m <sup>3</sup>

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<b>Naphthalene</b>	
LD50 oral rat	533 – 710 mg/kg body weight
<b>Hexane</b>	
LD50 oral rat	24 ml/kg
LD50 oral	15800 mg/kg
LD50 dermal rabbit	> 3350 mg/kg
LC50 Inhalation - Rat (Vapours)	259.354 mg/l
<b>Heptane</b>	
LD50 oral rat	> 5000 mg/kg
LD50 oral	5000 mg/kg
LD50 dermal rabbit	> 2000 mg/kg
LD50 dermal	3000 mg/kg
LC50 Inhalation - Rat	103 mg/m <sup>3</sup>
<b>Benzene, trimethyl-</b>	
LD50 oral rat	8970 mg/kg
LD50 oral	8970 mg/kg
<b>1,2,4 Trimethylbenzene</b>	
LD50 oral rat	3400 – 6000 mg/kg
LD50 oral	3280 mg/kg
LD50 dermal rabbit	> 3160 mg/kg
LC50 Inhalation - Rat	10.2 mg/l air
LC50 Inhalation - Rat (Dust/Mist)	18 mg/l/4h
<b>1,3,5-Trimethylbenzene</b>	
LD50 oral rat	6000 mg/kg body weight
LC50 Inhalation - Rat	10.2 mg/l air
<b>Cumene</b>	
LD50 oral rat	2910 mg/kg
LD50 oral	2700 mg/kg
LD50 dermal rabbit	> 3160 mg/kg body weight
LD50 dermal	10600 mg/kg
LC50 Inhalation - Rat [ppm]	8000 ppm
LC50 Inhalation - Rat (Dust/Mist)	39.3 mg/l/4h
<b>Octane</b>	
LD50 oral rat	> 5000 mg/kg body weight
LD50 dermal rabbit	> 2000 mg/kg body weight
LC50 Inhalation - Rat	> 24.88 mg/l air

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Skin corrosion/irritation : Causes skin irritation.

### Petroleum Distillates

Skin corrosion/irritation, rabbit 500 mg (moderate skin irritation)

Serious eye damage/irritation : Causes eye irritation.

### Petroleum Distillates

Serious eye damage/irritation, rabbit 100 mg (Mild eye irritation)

Respiratory or skin sensitization : Not classified

Germ cell mutagenicity : May cause genetic defects.

Carcinogenicity : May cause cancer (Inhalation).

### Petroleum Distillates

IARC group 3 - Not classifiable

### Xylene

IARC group 3 - Not classifiable

### Naphthalene

IARC group 2B - Possibly carcinogenic to humans

National Toxicity Program (NTP) Status Reasonably anticipated to be Human Carcinogen

### Cumene

IARC group 2B - Possibly carcinogenic to humans

National Toxicity Program (NTP) Status Reasonably anticipated to be Human Carcinogen

Reproductive toxicity : Suspected of damaging fertility or the unborn child.

### Isoparaffinic Hydrocarbon

NOAEL (animal/male, F0/P)  $\geq$  3000 mg/kg body weight

### Solvent Naphtha (Petroleum), Heavy Aromatic

NOAEL (animal/male, F0/P) 35 mg/kg body weight

NOAEL (animal/female, F0/P) 125 mg/kg body weight

### Naphthalene

LOAEL (animal/female, F0/P) 50 mg/kg body weight

LOAEL (animal/female, F1) 450 mg/kg body weight

NOAEL (animal/female, F0/P) 120 mg/kg body weight

STOT-single exposure : May cause drowsiness or dizziness.

### Petroleum Distillates

STOT-single exposure May cause drowsiness or dizziness.

### Hexane

STOT-single exposure May cause drowsiness or dizziness.

### Heptane

STOT-single exposure May cause drowsiness or dizziness.

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<b>1,2,4 Trimethylbenzene</b>	
STOT-single exposure	May cause respiratory irritation.
<b>1,3,5-Trimethylbenzene</b>	
STOT-single exposure	May cause respiratory irritation.
<b>Cumene</b>	
STOT-single exposure	May cause respiratory irritation.
<b>Octane</b>	
STOT-single exposure	May cause drowsiness or dizziness.
STOT-repeated exposure	: May cause damage to organs (nervous system) through prolonged or repeated exposure (Inhalation).
<b>Isoparaffinic Hydrocarbon</b>	
NOAEL (oral, rat, 90 days)	750 mg/kg body weight
NOAEL (dermal, rat/rabbit, 90 days)	≥ 495 mg/kg body weight
<b>Solvent Naphtha (Petroleum), Heavy Aromatic</b>	
LOAEC (inhalation, rat, vapor, 90 days)	4.71 mg/l air
NOAEC (inhalation, rat, vapor, 90 days)	2.355 mg/l air
<b>Xylene</b>	
LOAEL (oral, rat, 90 days)	150 mg/kg body weight
<b>Naphthalene</b>	
LOAEL (oral, rat, 90 days)	400 mg/kg body weight
LOAEC (inhalation, rat, vapor, 90 days)	0.011 mg/l air
NOAEL (oral, rat, 90 days)	200 mg/kg body weight
NOAEL (dermal, rat/rabbit, 90 days)	1000 mg/kg body weight
<b>Hexane</b>	
STOT-repeated exposure	May cause damage to organs through prolonged or repeated exposure.
<b>Heptane</b>	
LOAEC (inhalation, rat, vapor, 90 days)	16.6 mg/l air
NOAEC (inhalation, rat, vapor, 90 days)	3.3 mg/l air
<b>1,2,4 Trimethylbenzene</b>	
NOAEL (oral, rat, 90 days)	600 mg/kg body weight
NOAEC (inhalation, rat, vapor, 90 days)	1.8 mg/l air
<b>1,3,5-Trimethylbenzene</b>	
NOAEL (oral, rat, 90 days)	600 mg/kg body weight
NOAEC (inhalation, rat, vapor, 90 days)	1.8 mg/l air

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<b>Octane</b>	
NOAEC (inhalation, rat, vapor, 90 days)	24.3 mg/l air
Aspiration hazard	: May be fatal if swallowed and enters airways.
Viscosity, kinematic	: No data available
<b>Hydrocarbons, C9, aromatics</b>	
Viscosity, kinematic	< 1 mm <sup>2</sup> /s
<b>Xylene</b>	
Viscosity, kinematic	0.76 mm <sup>2</sup> /s (20°C/ 68°F)
<b>Heptane</b>	
Viscosity, kinematic	0.641 mm <sup>2</sup> /s 20 °C
<b>Cumene</b>	
Viscosity, kinematic	0.74 mm <sup>2</sup> /s
<b>Octane</b>	
Viscosity, kinematic	0.801 mm <sup>2</sup> /s Temp.: '20°C' Parameter: 'kinematic viscosity (in mm <sup>2</sup> /s)'
Symptoms/effects after inhalation	: Aspiration of the product into the lungs may cause very serious pneumonia. Depression of the central nervous system, headaches, dizziness, drowsiness, loss of coordination.
Symptoms/effects after skin contact	: Irritation (itching, redness, blistering).
Symptoms/effects after eye contact	: Mild eye irritation. Redness, itching, tears.
Symptoms/effects after ingestion	: May be fatal if swallowed and enters airways. Risk of lung edema.
Most Important Symptoms/Effects	: Risk of product entering the lungs on vomiting after ingestion. Pulmonary edema.
Chronic symptoms	: Causes damage to organs (nervous system) through prolonged or repeated exposure (Inhalation). Prolonged and frequent exposure through inhalation may cause cancer. May cause genetic defects. Suspected of damaging fertility or the unborn child.

## SECTION 12: Ecological information

### 12.1. Toxicity

Ecology - general : The product is not considered harmful to aquatic organisms or to cause long-term adverse effects in the environment.

<b>Petroleum Distillates</b>	
EC50 - Crustacea [1]	< 0.26 mg/l
<b>Solvent Naphtha (Petroleum), Heavy Aromatic</b>	
LC50 - Fish [1]	0.58 mg/l
EC50 - Crustacea [1]	0.76 mg/l
EC50 - Other aquatic organisms [1]	2.9 mg/l
LC50 - Fish [2]	6.1 mg/l
<b>Xylene</b>	
EC50 - Crustacea [1]	> 3.4 mg/l
LOEC (chronic)	3.16 mg/l
NOEC chronic fish	> 1.3 mg/l

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<b>Naphthalene</b>	
EC50 - Crustacea [1]	2.16 mg/l
NOEC (chronic)	0.59 mg/l
<b>Hexane</b>	
LC50 - Fish [1]	> 1 mg/l
EC50 - Crustacea [1]	3.88 mg/l
<b>Heptane</b>	
LC50 - Fish [1]	5.738 mg/l
EC50 - Crustacea [1]	0.1 mg/l
LOEC (chronic)	0.32 mg/l
NOEC (chronic)	0.17 mg/l
<b>Benzene, trimethyl-</b>	
EC50 - Crustacea [1]	5.4 mg/l
<b>1,2,4 Trimethylbenzene</b>	
LC50 - Fish [1]	7.72 mg/l
EC50 - Crustacea [1]	6.14 mg/l
EC50 96h - Algae [1]	2.356 mg/l
<b>1,3,5-Trimethylbenzene</b>	
LC50 - Fish [1]	12.52 mg/l
NOEC (chronic)	0.4 mg/l
NOEC chronic fish	0.277 mg/l
<b>Cumene</b>	
LC50 - Fish [1]	2.7 mg/l
EC50 - Crustacea [1]	1.2 mg/l
LC50 - Fish [2]	4.8 mg/l
EC50 72h - Algae [1]	2.01 mg/l
EC50 72h - Algae [2]	1.29 mg/l
ErC50 algae	2.01 mg/l
NOEC (chronic)	0.35 mg/l
NOEC chronic fish	0.38 mg/l
NOEC chronic crustacea	0.35 mg/l
NOEC chronic algae	0.22 mg/l
<b>Octane</b>	
EC50 - Crustacea [1]	0.3 mg/l
LOEC (chronic)	0.32 mg/l
NOEC (chronic)	0.17 mg/l

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### 12.2. Persistence and degradability

#### Solvent Naphtha (Petroleum), Heavy Aromatic

Persistence and degradability	49.56 % biodegradation 28 days.
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### 12.3. Bioaccumulative potential

#### Hexane

Partition coefficient n-octanol/water (Log Pow)	3.9
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#### Heptane

Partition coefficient n-octanol/water (Log Pow)	4.66
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#### Benzene, trimethyl-

Partition coefficient n-octanol/water (Log Pow)	3.6
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#### 1,2,4 Trimethylbenzene

Partition coefficient n-octanol/water (Log Pow)	3.78
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#### Cumene

Partition coefficient n-octanol/water (Log Pow)	3.66
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### 12.4. Mobility in soil

No additional information available

### 12.5. Other adverse effects

No additional information available

## SECTION 13: Disposal considerations

### 13.1. Disposal methods

Regional waste regulation	: Disposal must be done according to official regulations.
Waste treatment methods	: Dispose of contents/container in accordance with licensed collector's sorting instructions.
Sewage disposal recommendations	: Disposal must be done according to official regulations.
Product/Packaging disposal recommendations	: Disposal must be done according to official regulations. Dispose of this material and its container at hazardous or special waste collection point. Refer to all applicable national, international and local regulations or provisions.
Additional information	: Do not re-use empty containers.
Ecological waste information	: Avoid release to the environment.

## SECTION 14: Transport information

In accordance with DOT / IMDG / IATA




DOT	IMDG	IATA
<b>14.1. UN number</b>		
NA1993	3082	3082



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DOT	IMDG	IATA
<b>14.2. Proper Shipping Name</b>		
Combustible liquid, n.o.s. (Petroleum distillates)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Petroleum distillates)	Environmentally hazardous substance, liquid, n.o.s. (Petroleum distillates)
<b>14.3. Transport hazard class(es)</b>		
3	9	9
		
<b>14.4. Packing group</b>		
III	III	III
<b>14.5. Environmental hazards</b>		
Dangerous for the environment: No	Dangerous for the environment: No Marine pollutant: No	Dangerous for the environment: No
DOT Note: Material is not hazardous when shipped less than 119 gallons.		

### 14.6. Special precautions for user

#### DOT

UN-No.(DOT)	: NA1993
DOT Packaging Exceptions (49 CFR 173.xxx)	: 150
DOT Packaging Non Bulk (49 CFR 173.xxx)	: 203
DOT Packaging Bulk (49 CFR 173.xxx)	: 241
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27)	: 60 L
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75)	: 220 L
DOT Vessel Stowage Location	: A - The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel.

#### IMDG

Special provision (IMDG)	: 274, 335, 969
Limited quantities (IMDG)	: 5 L
Excepted quantities (IMDG)	: E1
Packing instructions (IMDG)	: LP01, P001
Packing provisions (IMDG)	: PP1
IBC packing instructions (IMDG)	: IBC03
Tank instructions (IMDG)	: T4
Tank special provisions (IMDG)	: TP1, TP29
EmS-No. (Fire)	: F-A - FIRE SCHEDULE Alfa - GENERAL FIRE SCHEDULE
EmS-No. (Spillage)	: S-F - SPILLAGE SCHEDULE Foxtrot - WATER-SOLUBLE MARINE POLLUTANTS
Stowage category (IMDG)	: A

#### IATA

PCA Excepted quantities (IATA)	: E1
PCA Limited quantities (IATA)	: Y964
PCA limited quantity max net quantity (IATA)	: 30kgG
PCA packing instructions (IATA)	: 964
PCA max net quantity (IATA)	: 450L

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CAO packing instructions (IATA) : 964  
CAO max net quantity (IATA) : 450L  
ERG code (IATA) : 9L

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

Not applicable

## SECTION 15: Regulatory information

### 15.1. US Federal regulations

All components of this product are present and listed as Active on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory.

Chemical(s) subject to the reporting requirements of Section 313 or Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986 and 40 CFR Part 372.

Xylene	CAS-No. 1330-20-7	1 – 4%
Naphthalene	CAS-No. 91-20-3	1 – 3%
Hexane	CAS-No. 110-54-3	1 – 2%
1,2,4 Trimethylbenzene	CAS-No. 95-63-6	1 – 2%
Cumene	CAS-No. 98-82-8	1 – 2%

#### Xylene (1330-20-7)

Listed on EPA Hazardous Air Pollutant (HAPS)

CERCLA RQ 100 lb

#### Naphthalene (91-20-3)

Listed on EPA Hazardous Air Pollutant (HAPS)

CERCLA RQ 100 lb

#### Hexane (110-54-3)

Listed on EPA Hazardous Air Pollutant (HAPS)

CERCLA RQ 5000 lb

#### Cumene (98-82-8)

Listed on EPA Hazardous Air Pollutant (HAPS)

CERCLA RQ 5000 lb

### 15.2. International regulations

#### CANADA

#### Petroleum Distillates (8002-05-9)

Listed on the Canadian DSL (Domestic Substances List)

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### Isoparaffinic Hydrocarbon (64742-47-8)

Listed on the Canadian DSL (Domestic Substances List)

### Solvent Naphtha (Petroleum), Heavy Aromatic (64742-94-5)

Listed on the Canadian DSL (Domestic Substances List)

### Hydrocarbons, C9, aromatics (64742-95-6)

Listed on the Canadian DSL (Domestic Substances List)

### Xylene (1330-20-7)

Listed on the Canadian DSL (Domestic Substances List)

### Naphthalene (91-20-3)

Listed on the Canadian DSL (Domestic Substances List)

### Hexane (110-54-3)

Listed on the Canadian DSL (Domestic Substances List)

### Heptane (142-82-5)

Listed on the Canadian DSL (Domestic Substances List)

### Benzene, trimethyl- (25551-13-7)

Listed on the Canadian DSL (Domestic Substances List)

### 1,2,4 Trimethylbenzene (95-63-6)

Listed on the Canadian DSL (Domestic Substances List)

### 1,3,5-Trimethylbenzene (108-67-8)

Listed on the Canadian DSL (Domestic Substances List)

### Cumene (98-82-8)

Listed on the Canadian DSL (Domestic Substances List)

### Octane (111-65-9)

Listed on the Canadian DSL (Domestic Substances List)

#### EU-Regulations

No additional information available

#### National regulations

### Petroleum Distillates (8002-05-9)

Listed on INSQ (Mexican National Inventory of Chemical Substances)

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### Isoparaffinic Hydrocarbon (64742-47-8)

Listed on INSQ (Mexican National Inventory of Chemical Substances)

### Solvent Naphtha (Petroleum), Heavy Aromatic (64742-94-5)

Listed on INSQ (Mexican National Inventory of Chemical Substances)

### Hydrocarbons, C9, aromatics (64742-95-6)

Listed on INSQ (Mexican National Inventory of Chemical Substances)

### Xylene (1330-20-7)

Listed on INSQ (Mexican National Inventory of Chemical Substances)

### Naphthalene (91-20-3)

Listed on IARC (International Agency for Research on Cancer)  
Listed as carcinogen on NTP (National Toxicology Program)  
Listed on INSQ (Mexican National Inventory of Chemical Substances)

### Hexane (110-54-3)

Listed on INSQ (Mexican National Inventory of Chemical Substances)

### Heptane (142-82-5)

Listed on INSQ (Mexican National Inventory of Chemical Substances)

### Benzene, trimethyl- (25551-13-7)

Listed on INSQ (Mexican National Inventory of Chemical Substances)

### 1,2,4 Trimethylbenzene (95-63-6)

Listed on INSQ (Mexican National Inventory of Chemical Substances)

### 1,3,5-Trimethylbenzene (108-67-8)

Listed on INSQ (Mexican National Inventory of Chemical Substances)

### Cumene (98-82-8)

Listed on IARC (International Agency for Research on Cancer)  
Listed as carcinogen on NTP (National Toxicology Program)  
Listed on INSQ (Mexican National Inventory of Chemical Substances)

### Octane (111-65-9)

Listed on INSQ (Mexican National Inventory of Chemical Substances)

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### 15.3. US State regulations



**WARNING:**

This product can expose you to Petroleum Distillates, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

### SECTION 16: Other information

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Full text of hazard classes and H-statements	
H225	Highly flammable liquid and vapor
H226	Flammable liquid and vapor
H227	Combustible liquid
H302	Harmful if swallowed
H304	May be fatal if swallowed and enters airways
H315	Causes skin irritation
H319	Causes serious eye irritation
H320	Causes eye irritation
H331	Toxic if inhaled
H332	Harmful if inhaled
H335	May cause respiratory irritation
H336	May cause drowsiness or dizziness
H340	May cause genetic defects
H350	May cause cancer
H351	Suspected of causing cancer
H361	Suspected of damaging fertility or the unborn child
H373	May cause damage to organs through prolonged or repeated exposure
H400	Very toxic to aquatic life
H401	Toxic to aquatic life
H410	Very toxic to aquatic life with long lasting effects
H411	Toxic to aquatic life with long lasting effects

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.