

Safety Data Sheet acc. to OSHA HCS

Printing date 12/19/2018

Reviewed on 12/19/2018

1 Identification

- **Product identifier**
- **Trade name:** **DIPENTENE**
- **Product Description** *terpene hydrocarbon*
- **Application of the substance / the mixture** *Chemical intermediate*
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
 Manufacturer:
 DRT America LLC
 400 Governor Treutlen Drive
 Rincon, GA 31326
 Supplier:
 Les Dérivés Résiniques & Terpéniques
 30 Rue Gambetta, BP 206
 40105 Dax Cedex
 France
- **Information department:** *Regulatory Affairs*
- **Emergency telephone number:**
 Within USA and Canada: 1-800-CHEMTREC (424-9300)
 Outside the USA and Canada: 1-703-527-3887

2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS02 Flame

Flam. Liq. 3 H226 Flammable liquid and vapor.



GHS08 Health hazard

Asp. Tox. 1 H304 May be fatal if swallowed and enters airways.



GHS09 Environment

Aquatic Acute 1 H400 Very toxic to aquatic life.

Aquatic Chronic 1 H410 Very toxic to aquatic life with long lasting effects.



GHS07

Skin Irrit. 2 H315 Causes skin irritation.

Skin Sens. 1 H317 May cause an allergic skin reaction.

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· **Label elements**

· **GHS label elements**

The substance is classified and labeled according to the Globally Harmonized System (GHS).

· **Hazard pictograms**



GHS02 GHS07 GHS08 GHS09

· **Signal word** Danger

· **Hazard statements**

H226 Flammable liquid and vapor.

H315 Causes skin irritation.

H317 May cause an allergic skin reaction.

H304 May be fatal if swallowed and enters airways.

H400 Very toxic to aquatic life.

H410 Very toxic to aquatic life with long lasting effects.

· **Precautionary statements**

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

P233 Keep container tightly closed.

P243 Take precautionary measures against static discharge.

P261 Avoid breathing dust/fume/gas/mist/vapors/spray

P264 Wash thoroughly after handling.

P273 Avoid release to the environment.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P301+P310 If swallowed: Immediately call a poison center/doctor.

P331 Do NOT induce vomiting.

P303+P361+P353 If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

P362+P364 Take off contaminated clothing and wash it before reuse.

P333+P313 If skin irritation or rash occurs: Get medical advice/attention.

P321 Specific treatment (see on this label).

P363 Wash contaminated clothing before reuse.

P403+P235 Store in a well-ventilated place. Keep cool.

P405 Store locked up.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

· **Information pertaining to particular dangers for man and environment:**

Effects on human health: If swallowed accidentally, the product may enter the lungs due to its low viscosity and lead to the rapid development of very serious pulmonary lesions (medical surveillance for 48 hours minimum).

· **Classification system:**

· **NFPA ratings (scale 0 - 4)**



Health = 2

Fire = 2

Reactivity = 0

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· **HMIS-ratings (scale 0 - 4)**

HEALTH	2	Health = 2
FIRE	2	Fire = 2
REACTIVITY	0	Reactivity = 0

- **Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** Not determined.
- **vPvB:** Not determined.

3 Composition/information on ingredients

· **Chemical characterization: Substances**

Multiconstituent substance, consisting of the following main constituents (> 10%):

- dipentene (40 - 50%)
- and beta phellandrene (28 - 35%)

· **CAS No.:**

138-86-3
555-10-2

· **CAS No. Description**

1-methyl-4-prop-1-en-2-ylcyclohexene [dipentene]
Cyclohexene, 3-methylene-6-(1-methylethyl) [beta-phellandrene]
138-86-3 DIPENTENE

· **Index number:** 601-029-00-7

· **Impurities and stabilising additives:**

Impurities levels:

CAS No. 127-91-3: beta-pinene (1-10%)
CAS No. 13466-78-9: delta-3-carene (2-8%)
CAS No. 123-35-3: myrcene (2-3%)
CAS No. 99-87-6: para-cymene (0-2%)
CAS No. 80-56-8: alpha-pinene (0-1%)

4 First-aid measures

· **Description of first aid measures**

· **After inhalation:**

Supply fresh air. If symptoms are experienced, get medical attention.
In case of unconsciousness place patient stably in side position for transportation.

· **After skin contact:**

Immediately rinse with plenty of water. Remove contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention if irritation occurs.

· **After eye contact:**

Immediately rinse with plenty of water. Remove contact lenses, if present and easy to do. Hold eyelids apart and flush eyes with plenty of cool low-pressure water for 15 minutes. Consult an ophthalmologist.

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- **After swallowing:**
Do NOT induce vomiting.
If the person is conscious, immediately rinse out mouth with water.
Immediately call a doctor.
- **Information for doctor:**
- **Most important symptoms and effects, both acute and delayed**
Pulmonary effects if swallowed accidentally.
- **Indication of any immediate medical attention and special treatment needed**
This product contains a hydrocarbon solvent. Aspiration into the lungs will result in chemical pneumonitis and may be fatal. Ingestion may cause damage to the esophageal mucosa which would contraindicate insertion of a nasogastric tube. Measures against circulatory shock and respiratory depression may be necessary.

5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:**
Dry chemical, carbon dioxide or foam may be used on fires involving this product.
- **For safety reasons unsuitable extinguishing agents:** If water must be used, use as a spray only.
- **Special hazards arising from the substance or mixture**
In case of fire, may release irritant and toxic fumes.
- **Advice for firefighters**
- **Protective equipment:**
Wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH approved (or equivalent) and full protective gear when fighting fires involving this product.
- **Additional information** Cool endangered receptacles with water spray.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
Wear protective equipment. Keep unprotected persons away.
Provide adequate ventilation.
Keep away from ignition sources
Use suitable respiratory protective device incase of insufficient ventilation.
- **Environmental precautions:**
Do not allow product to reach soil, waterways, drains and sewers.
Inform the relevant authorities if the product has caused environmental pollution (soil, waterways, drains or sewers).
- **Methods and material for containment and cleaning up:**
Small spills:
Absorb spilled liquid with inert absorbent. Collect and seal in an appropriate container properly labelled for disposal.
Large spills:
Stop spill if it can be done without danger. Dike. Pump as much liquid as possible with an explosion-proof pump or a hand pump. Absorb remaining liquid with inert absorbent. Collect and seal in an appropriate container properly labelled for disposal.
Use only non-sparking tools.

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- **Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.
- **Protective Action Criteria for Chemicals**
- **PAC-1:** Substance is not listed.
- **PAC-2:** Substance is not listed.
- **PAC-3:** Substance is not listed.

7 Handling and storage

- **Handling:**
- **Precautions for safe handling**
Flammable. Bond containers during filling or discharge when performed at temperatures at or above the product flash point.
Keep containers closed when not in use.
Ensure good ventilation/exhaustion at the workplace.
Prevent formation of aerosols.
- **Information about protection against explosions and fires:**
Keep away from heat, flame, sparks and other ignition sources.
Spontaneous combustion may occur in materials soaked with this product and exposed to air, as well as soaked vessel and piping insulation.
Avoid storing product near incompatible materials. See SDS Section 10.
Use only non-sparking tools.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:**
Store in areas designed for flammable liquid storage (see NFPA 30).
Store in a cool, dry, well-ventilated area.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:**
Recommended materials for storage: stainless steel or aluminum containers with specific inner coating.
Certain plastics and elastomers may not be compatible with the product. Test or get manufacturer's recommendation prior to use.
Keep receptacle tightly sealed.
- **Specific end use(s)** No further relevant information available.

8 Exposure controls/personal protection

- **Additional information about design of technical systems:**
Eliminate ignition sources and prevent build-up of static electrical charges.
Properly discard any item soaked with material, as spontaneous heating may occur.
Eyewash fountains and safety showers should be easily accessible.
Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.
Discharge from the ventilation system should comply with applicable air pollution control regulations.

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Keep area clean. Product will burn.

For good industrial hygiene practice: Completely isolate and thoroughly clean all equipment, piping, or vessels before beginning maintenance or repairs.

• **Control parameters**

• **Components with limit values that require monitoring at the workplace:**

80-56-8: alpha-pinene (0-1%)
TLV Long-term value: 112 mg/m³, 20 ppm
(SEN) NIC-DSEN

13466-78-9: delta-3-carene (2-8%)
TLV Long-term value: 112 mg/m³, 20 ppm
(SEN) NIC-DSEN

127-91-3: beta-pinene (1-10%)
TLV Long-term value: 112 mg/m³, 20 ppm

CAS: 138-86-3 DIPENTENE (40-50%)

WEEL Long-term value: 30 ppm

• **Ingredients with biological limit values:** None

• **Additional information:** This sheet is based on the current valid lists at the time of its preparation.

• **Exposure controls**

• **Personal protective equipment:**

• **General protective and hygienic measures:**

Avoid contact with eyes, skin, and clothing.

Avoid breathing vapor, fumes or mist.

Handle in areas with adequate ventilation.

Do not swallow.

Avoid contamination of food, beverages, or smoking materials.

Wash thoroughly after handling, and before eating, drinking or smoking.

Remove contaminated clothing and shoes promptly and clean thoroughly before reuse.

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing.

Wash hands before breaks and at the end of work.

• **Breathing equipment:**

Appropriate respiratory protection is required when exposure to airborne contaminants may exceed acceptable limits. Respirators should be selected and used in accordance with OSHA, Subpart I (29 CFR 1910.134) and manufacturers recommendations.

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

• **Protection of hands:** Impervious gloves

• **Eye protection:**



Tightly sealed goggles

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- **Body protection:** Appropriate protective clothing

9 Physical and chemical properties

· **Information on basic physical and chemical properties**

· **General Information**

· **Appearance:**

· Form:	Liquid
· Color:	Slightly yellow
· Odor:	Pine
· Odor threshold:	Not determined.

· **pH-value:** Not determined.

· **Change in condition**

· Melting/freezing point:	Not determined.
· Initial Boiling point or boiling range:	175-188 °C (347-370.4 °F)

· **Flash point:** 45 °C (113 °F) (closed cup)

· **Auto ignition temperature:** Not determined.

· **Explosive properties:** This substance does not contain any chemical groups associated with explosive properties.

· **Explosion limits:**

· Lower:	Not determined.
· Upper:	Not determined.

· **Oxidizing properties** The substance does not contain any chemical groups associated with oxidizing properties.

· **Vapor pressure at 20 °C (68 °F):** 156 Pa

· **Density:** Not determined.

· **Bulk density:** Not determined

· **Relative density at 20 °C (68 °F):** 0.84

· **Solubility in / Miscibility with**

· **Water:** Very slightly soluble

· **Partition coefficient (n-octanol/water):** Not determined.

· **Viscosity:**

· **Dynamic at 25 °C (77 °F):** 1.3 mPa.s

· **Kinematic at 40 °C (104 °F):** < 7 mm²/s

· **Other information** No further relevant information available.

10 Stability and reactivity

- **Reactivity** No further relevant information available.

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- **Chemical stability** Stable under recommended handling and storage conditions.
- **Thermal decomposition / conditions to be avoided:**
No decomposition if used according to specifications.
- **Possibility of hazardous reactions**
No hazardous reactions known except those with incompatible materials listed below.
- **Conditions to avoid** Keep away from heat and sources of ignition.
- **Incompatible materials:** Incompatible with: oxidizing agents, acids and acid catalysts
- **Hazardous decomposition products:** No dangerous decomposition products known.

11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**
- **LD/LC50 values that are relevant for classification:**
138-86-3: Dipentene
Oral LD₅₀: >2000 mg/kg (rat) OECD 423
Dermal LD₅₀: >5000 mg/kg (rabbit) (d-limonene)
No LD₅₀/LC₅₀ are available for beta-phellandrene.

For the toxicological effects listed below: when the substance is classified for a specific endpoint, data presented relate to the components responsible for classification.

- **Primary irritant effect:**
- **Skin corrosion/irritation:**
The substance is classified as a skin irritant (category 2) due to the properties of dipentene (d-limonene) and some of its impurities: delta-3-carene, myrcene, beta-pinene and alpha-pinene. Moderate irritating effects were observed in rabbits with d-limonene and l-limonene in a primary dermal irritation study performed according to OECD guideline 404. Irritant effects were observed with myrcene, delta-3-carene, alpha-pinene and beta-pinene in an in vitro skin irritation test on reconstructed human epidermis.
- **Serious eye damage/irritation:**
Only reversible effects were observed with two structurally related substances in eye irritation studies in rabbit (OECD 405).
No irritating effect.
- **Skin Sensitization:** Sensitization possible through skin contact.
- **Additional toxicological information:**
Mutagenicity/genotoxicity:
Experimental data are available for dipentene, d-limonene (one isomer of dipentene), delta-3-carene, myrcene, para-cymene, beta-pinene and alpha-pinene. No mutagenic/genotoxic effects were observed with these components of this substance.
Carcinogenicity:
The substance is not expected to be carcinogenic for humans.
D'limonene (CAS No. 5989-27-5, one isomer of dipentene)
D-limonene was tested in a 2 year oral carcinogenicity study in mice and rats. This constituent induced a male-rat specific effect on kidneys, not relevant for humans. No increased incidences of other tumors were reported.
Myrcene (CAS No. 123-35-3)
In a 2 year study myrcene, administered by gavage at toxic doses in mice and rats, increased the incidence of benign and malignant tumors. Relevance of these tumors for humans remains questionable.

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As regards alpha-pinene, beta-pinene, beta-phellandrene and other impurities, they are not expected to be carcinogenic.

Reproductive toxicity:

Available information on potential reproductive toxicity of the substance components or impurities is limited. However, no reproductive effects are expected to occur by the routes of human exposure.

- **Carcinogenic categories**
- **IARC (International Agency for Research on Cancer)** Substance is not listed.
- **NTP (National Toxicology Program)** 123-35-3
- **OSHA-Ca (Occupational Safety & Health Administration)** Substance is listed.

12 Ecological information

· **Toxicity**

· **Aquatic toxicity:**

This substance is classified very toxic to aquatic life (aquatic acute 1 - H400) and very toxic to aquatic life with long lasting effects (aquatic chronic 1 - H410) due to the presence of dipentene (dl-limonene), delta-3-carene, myrcene, beta-pinene, alpha-pinene and sesquiterpenes.

· **Persistence and degradability**

Information is not available for all components therefore it is not possible to draw an overall conclusion for the product.

· **Behavior in environmental systems:**

- **Bioaccumulative potential** No further relevant information available.
- **Mobility in soil** No further relevant information available.

· **Ecotoxicological effects:**

· **Remark:** Very toxic for fish

· **Additional ecological information:**

· **General notes:**

Do not allow product to reach ground water, water course or sewage system.

Danger to drinking water if even small quantities leak into the ground.

Also poisonous for fish and plankton in water bodies.

Very toxic for aquatic organisms

· **Results of PBT and vPvB assessment**

- **PBT:** Not determined.
- **vPvB:** Not determined.
- **Other adverse effects** No further relevant information available.

13 Disposal considerations

· **Waste treatment methods**

· **Recommendation:**

Incineration in accordance with applicable regulations is the recommended disposal method. Disposal should be in accordance with applicable Federal, State and local regulations.

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- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.

14 Transport information

· UN-Number	
· DOT, ADR, IMDG, IATA	UN1993
· UN proper shipping name	
· DOT	Flammable liquids, n.o.s. (DIPENTENE)
· ADR	1993 FLAMMABLE LIQUID, N.O.S. (DIPENTENE), ENVIRONMENTALLY HAZARDOUS
· IMDG, IATA	FLAMMABLE LIQUID, N.O.S. (DIPENTENE)
· Transport hazard class(es)	
· DOT	
	 
· Class	3 Flammable liquids
· Label	3
· ADR, IMDG	
	 
· Class	3 Flammable liquids
· Label	3
· IATA	
	
· Class	3 Flammable liquids
· Label	3
· Packing group	
· DOT, ADR, IMDG, IATA	III
· Environmental hazards:	Environmentally hazardous substance, liquid; Marine Pollutant
· Marine pollutant:	Yes (P) Symbol (fish and tree)

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· Special marking (ADR):	Symbol (fish and tree)
· Special precautions for user	Warning: Flammable liquids
· Danger code (Kemler):	30
· EMS Number:	F-E, S-E
· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
· Transport/Additional information:	
· DOT	
· Remarks:	Special marking with the symbol (fish and tree).
· ADR	
· Excepted quantities (EQ)	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
· IMDG	
· Limited quantities (LQ)	5L
· Excepted quantities (EQ)	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
· UN "Model Regulation":	UN 1993 FLAMMABLE LIQUIDS, N.O.S. (DIPENTENE), 3, III, ENVIRONMENTALLY HAZARDOUS

15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **Sara**
- **Section 355 (extremely hazardous substances):** Substance is not listed.
- **Section 313 (Specific toxic chemical listings):** Substance is not listed.
- **SECTIONS 302/304**
This product is not an Extremely Hazardous Substance subject to reporting under 40CFR355.
- **SECTION 311 AND 312**
Health Hazard:
Aspiration Hazard
Health Hazard:
Skin Corrosion or Irritation
Physical Hazard:
Flammable (gases, aerosols, liquids, or solids)
- **CERCLA**
This product does not contain any chemicals subject to reporting as a CERCLA Hazardous Substance under 40CFR302.4.
- **RCRA**
This product exhibits the following characteristics listed in 40CFR261, Subpart C; ignitability (D-001). Disposal of unused product must comply with the hazardous waste regulations.
- **TSCA (Toxic Substances Control Act):** Substance is listed.

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· **Proposition 65**

· **Chemicals known to cause cancer:**

This substance can expose you to beta-myrcene. Beta-myrcene is known to the state of California to cause cancer.

Substance is listed.

· **Chemicals known to cause reproductive toxicity for females:** Substance is not listed.

· **Chemicals known to cause reproductive toxicity for males:** Substance is not listed.

· **Chemicals known to cause developmental toxicity:** Substance is not listed.

· **New Jersey Right-to-Know List:**

This substance contains dipentene. Dipentene is included on the NJ RTK list.

Substance is listed.

· **New Jersey Special Hazardous Substance List:** Substance is not listed.

· **Pennsylvania Right-to-Know List:**

This substance may contain para-cymene and/or alpha-pinene. Both substances are included on the PA RTK list.

Substance is listed.

· **Pennsylvania Special Hazardous Substance List:** Substance is not listed.

· **Carcinogenic categories**

· **EPA (Environmental Protection Agency)** Substance is not listed.

· **TLV (Threshold Limit Value established by ACGIH)** Substance is not listed.

· **NIOSH-Ca (National Institute for Occupational Safety and Health)** Substance is not listed.

· **Canadian substance listings:**

· **Canadian Domestic Substances List (DSL)** Substance is listed.

· **Canadian Non-Domestic Substances List (NDSL)** Substance is not listed.

· **GHS label elements**

The substance is classified and labeled according to the Globally Harmonized System (GHS).

· **Hazard pictograms**



GHS02 GHS07 GHS08 GHS09

· **Signal word** Danger

· **Hazard statements**

H226 Flammable liquid and vapor.

H315 Causes skin irritation.

H317 May cause an allergic skin reaction.

H304 May be fatal if swallowed and enters airways.

H400 Very toxic to aquatic life.

H410 Very toxic to aquatic life with long lasting effects.

· **Precautionary statements**

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

P233 Keep container tightly closed.

P243 Take precautionary measures against static discharge.

P261 Avoid breathing dust/fume/gas/mist/vapors/spray

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P264 Wash thoroughly after handling.
 P273 Avoid release to the environment.
 P280 Wear protective gloves/protective clothing/eye protection/face protection.
 P301+P310 If swallowed: Immediately call a poison center/doctor.
 P331 Do NOT induce vomiting.
 P303+P361+P353 If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
 P362+P364 Take off contaminated clothing and wash it before reuse.
 P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
 P321 Specific treatment (see on this label).
 P363 Wash contaminated clothing before reuse.
 P403+P235 Store in a well-ventilated place. Keep cool.
 P405 Store locked up.
 P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

16 Other information

DISCLAIMER: The information and recommendations contained in this Safety Data Sheet have been compiled from sources believed to be reliable and to represent the most reasonable current opinion on the subject when the SDS was prepared. No warranty, guaranty or representation is made as to the correctness or sufficiency of the information. The user of this product must decide what safety measures are necessary to safely use this product, either alone or in combination with other products, and determine its environmental regulatory compliance obligations under any applicable federal or state laws.

- **Department issuing SDS:** Regulatory Affairs Department
- **Date of preparation / last revision** 12/19/2018 / 4.0
- **Abbreviations and acronyms:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

P: Marine Pollutant

ACGIH: American Conference of Governmental Industrial Hygienists

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

HMS: Hazardous Materials Identification System (USA)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

NIOSH: National Institute for Occupational Safety

OSHA: Occupational Safety & Health

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

BEI: Biological Exposure Limit

Flam. Liq. 3: Flammable liquids – Category 3

Skin Irrit. 2: Skin corrosion/irritation – Category 2

Skin Sens. 1: Skin sensitisation – Category 1

Asp. Tox. 1: Aspiration hazard – Category 1

Aquatic Acute 1: Hazardous to the aquatic environment - acute aquatic hazard – Category 1

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Aquatic Chronic 1: Hazardous to the aquatic environment - long-term aquatic hazard – Category 1

· **Sources** Literature and company data

· * **Data compared to the previous version altered.**

Section 14 - Revised HAZMAT Classification from UN2052 to UN1993

Section 15 -

SARA 311/312 physical and health hazard warnings updated to match OSHA Hazard Communications Standard 2012 Final Rule Technical Amendment effective January 1st, 2018.

US