



Orfom® MC Collector Developmental

Version 1.9

Revision Date 2011-12-09

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Product information

Trade name : Orfom® MC Collector Developmental
 Material : 1112022, 1111603, 1111604, 1111606, 1111607, 1111608, 1111609, 1111612

Company : Mining Chemicals
 10001 Six Pines Drive
 The Woodlands, TX 77380

Emergency telephone:

Health:

866.442.9628 (North America)
 1.832.813.4984 (International)

Transport:

North America: CHEMTREC 800.424.9300 or 703.527.3887
 Asia: +800 CHEMCALL (+800 2436 2255) China: 0532.8388.9090
 EUROPE: BIG +32.14.584545 (phone) or +32.14583516 (telefax)
 Chemcare Asia: Tel: +65 6848 9048 - Mob: +65 8382 9188 - Fax: +65 6848
 South America SOS-Cotec Inside Brazil: 0800.111.767 Outside Brazil: +55.19.3467.1600

Responsible Department : Product Safety and Toxicology Group
 E-mail address : MSDS@CPChem.com
 Website : www.CPChem.com

This product is for experimental uses only. The product has not been completely analyzed and all of the hazards may not be known. Please use caution while handling this product.

2. HAZARDS IDENTIFICATION

Emergency Overview

Form: Liquid **Physical state:** Liquid
 OSHA Hazards : Combustible Liquid, Corrosive, Skin sensitizer, Carcinogen, Harmful by ingestion., Harmful by skin absorption., Harmful by inhalation.

GHS Classification

: Flammable liquids, Category 4
 Acute toxicity, Category 5, Oral
 Acute toxicity, Category 4, Inhalation
 Acute toxicity, Category 4, Dermal
 Skin corrosion, Category 1
 Serious eye damage, Category 1
 Skin sensitization, Category 1
 Germ cell mutagenicity, Category 1B

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Carcinogenicity, Category 1A
 Specific target organ systemic toxicity - repeated exposure,
 Category 1, Eyes, Blood
 Specific target organ systemic toxicity - repeated exposure,
 Category 2
 Aspiration hazard, Category 1
 Acute aquatic toxicity, Category 1
 Chronic aquatic toxicity, Category 1

GHS-Labeling

Symbol(s)



Signal Word

: Danger

Hazard Statements

: H227: Combustible liquid
 H303: May be harmful if swallowed.
 H304: May be fatal if swallowed and enters airways.
 H312 + H332: Harmful in contact with skin or if inhaled.
 H314: Causes severe skin burns and eye damage.
 H317: May cause an allergic skin reaction.
 H340: May cause genetic defects.
 H350: May cause cancer.
 H372: Causes damage to organs (Eyes, Blood) through
 prolonged or repeated exposure.
 H373: May cause damage to organs through prolonged or
 repeated exposure.
 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.
 P272: Contaminated work clothing should not be allowed out
 of the workplace.
 P273: Avoid release to the environment.
 P280: Wear protective gloves/ protective clothing/ eye
 protection/ face protection.
Response:
 P301 + P310: IF SWALLOWED: Immediately call a POISON
 CENTER or doctor/ physician.
 P305 + P351 + P338: IF IN EYES: Rinse cautiously with
 water for several minutes. Remove contact lenses, if present
 and easy to do. Continue rinsing.
 P331: Do NOT induce vomiting.
 P363: Wash contaminated clothing before reuse.
 P370 + P378: In case of fire: Use dry sand, dry chemical or
 alcohol-resistant foam for extinction.
 P391: Collect spillage.
Storage:
 P403 + P235: Store in a well-ventilated place. Keep cool.
 P405: Store locked up.
Disposal:
 P501: Dispose of contents/ container to an approved waste
 disposal plant.

Carcinogenicity:

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IARC	Group 2B: Possibly carcinogenic to humans Decant (clarified) Oils 64741-62-4 Light Cycle Oil 64741-59-9 Ethylbenzene 100-41-4 Naphthalene 91-20-3
NTP	Reasonably anticipated to be a human carcinogen Naphthalene 91-20-3
ACGIH	Confirmed animal carcinogen with unknown relevance to humans: The agent is carcinogenic in experimental animals at a relatively high dose, by route(s) of administration, at site(s), of histologic type(s), or by mechanism(s) that may not be relevant to worker exposure. Available epidemiologic studies do not confirm an increased risk of cancer in exposed humans. Available evidence does not suggest that the agent is likely to cause cancer in humans except under uncommon or unlikely routes or levels of exposure. Ethylbenzene 100-41-4

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms	:	Orfom® MC24 Collector Orfom® MC44 Collector Orfom® MC29 Collector Orfom® MCX Collector Orfom® MCS Collector Orfom® MCP Collector Orfom® MCH Collector Orfom® MC27 Collector Mineral Processing Chemicals Kit Orfom® MC37 Collector Orfom® MC47 Collector Orfom® MCO
Molecular formula	:	UVCB

Component	CAS-No.	Weight %
n-Dodecyl Mercaptan	112-55-0	0 - 80
Di-t-Nonyl Polysulfide	68425-16-1	0 - 80
C12-C14 Isoalkanes	68551-19-9	0 - 80
C13-C16 Isoalkanes	68551-20-2	0 - 80
Di-Tert-Butyl Polysulfide	68937-96-2	0 - 80
1-Decene, Dimer, Hydrogenated	68649-11-6	0 - 80
Decant (clarified) Oils	64741-62-4	0 - 80
Light Cycle Oil	64741-59-9	0 - 80
tert-Dodecanethiol	25103-58-6	0 - 80
Distillates (petroleum), Hydrotreated light	64742-47-8	0 - 80
Heavy Cycle Oil	64741-60-2	0 - 80
tert-Nonanethiol	25360-10-5	0 - 80
n-Octyl Mercaptan	111-88-6	0 - 80
Ethylbenzene	100-41-4	5 - 10
Benzene, dimethyl-	1330-20-7	1 - 5
Naphthalene	91-20-3	1 - 5

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This is an experimental material: The composition of this material may vary.

4. FIRST AID MEASURES

- General advice : Move out of dangerous area. Consult a physician. 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 : Call a physician or poison control center immediately. If unconscious place in recovery position and seek medical advice.
- In case of skin contact : Immediate medical treatment is necessary as untreated wounds from corrosion of the skin heal slowly and with difficulty. If on skin, rinse well with water. If on clothes, remove clothes.
- In case of eye contact : Small amounts splashed into eyes can cause irreversible tissue damage and blindness. In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Continue rinsing eyes during transport to hospital. Remove contact lenses. Protect unharmed eye. Keep eye wide open while rinsing. If eye irritation persists, consult a specialist.
- If swallowed : Keep respiratory tract clear. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. If symptoms persist, call a physician. Take victim immediately to hospital.

5. FIRE-FIGHTING MEASURES

- Flash point : 87.8 °C (190.0 °F)
- Suitable extinguishing media : Carbon dioxide (CO₂).
- Unsuitable extinguishing media : High volume water jet.
- Specific hazards during fire fighting : Do not allow run-off from fire fighting to enter drains or water courses.
- Special protective equipment for fire-fighters : Wear self contained breathing apparatus for fire fighting if necessary.
- Further information : Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. For safety reasons in case of fire, cans should be stored separately in closed containments. Use a water spray to cool fully closed containers.
- Fire and explosion protection : Do not spray on an open flame or any other incandescent material. Keep away from open flames, hot surfaces and

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sources of ignition.

6. ACCIDENTAL RELEASE MEASURES

- Personal precautions : Use personal protective equipment. Ensure adequate ventilation. Evacuate personnel to safe areas.
- Environmental precautions : Prevent product from entering drains. Prevent further leakage or spillage if safe to do so. If the product contaminates rivers and lakes or drains inform respective authorities.
- Methods for cleaning up : Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). Keep in suitable, closed containers for disposal.

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. Provide sufficient air exchange and/or exhaust in work rooms. To avoid spills during handling keep bottle on a metal tray. Dispose of rinse water in accordance with local and national regulations. Persons susceptible to skin sensitization problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being used.
- Advice on protection against fire and explosion : Do not spray on an open flame or any other incandescent material. Keep away from open flames, hot surfaces and sources of ignition.

Storage

- Requirements for storage areas and containers : Prevent unauthorized access. 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.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION**Ingredients with workplace control parameters****Chevron Phillips Chemical Company LP**

Ingredients	Basis	Value	Control parameters	Note
C12-C14 Isoalkanes	Manufacturer	TWA	1,200 mg/m ³	
C13-C16 Isoalkanes	Manufacturer	TWA	400 ppm,	
tert-Dodecanethiol	Manufacturer	TWA	0.1 ppm,	

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Ingredients	Basis	Value	Control parameters	Note
n-Octyl Mercaptan	NIOSH REL	C	0.5 ppm, 3 mg/m ³	
Ethylbenzene	ACGIH	TWA	100 ppm,	(), BEI, A3,
	ACGIH	STEL	125 ppm,	(), BEI, A3,
	OSHA Z-1	TWA	100 ppm, 435 mg/m ³	(b),
	OSHA Z-1-A	TWA	100 ppm, 435 mg/m ³	
	OSHA Z-1-A	STEL	125 ppm, 545 mg/m ³	
	NIOSH REL	TWA	100 ppm, 435 mg/m ³	
	NIOSH REL	ST	125 ppm, 545 mg/m ³	
Benzene, dimethyl-	ACGIH	TWA	100 ppm,	BEI, A4,
	ACGIH	STEL	150 ppm,	BEI, A4,
	OSHA Z-1	TWA	100 ppm, 435 mg/m ³	(b),
	OSHA Z-1-A	TWA	100 ppm, 435 mg/m ³	
	OSHA Z-1-A	STEL	150 ppm, 655 mg/m ³	
Naphthalene	ACGIH	TWA	10 ppm,	A4, Skin,
	ACGIH	STEL	15 ppm,	A4, Skin,
	OSHA Z-1	TWA	10 ppm, 50 mg/m ³	(b),
	OSHA Z-1-A	TWA	10 ppm, 50 mg/m ³	
	OSHA Z-1-A	STEL	15 ppm, 75 mg/m ³	

() Adopted values or notations enclosed are those for which changes are proposed in the NIC

(b) The value in mg/m³ is approximate.

A3 Confirmed animal carcinogen with unknown relevance to humans: The agent is carcinogenic in experimental animals at a relatively high dose, by route(s) of administration, at site(s), of histologic type(s), or by mechanism(s) that may not be relevant to worker exposure. Available epidemiologic studies do not confirm an increased risk of cancer in exposed humans. Available evidence does not suggest that the agent is likely to cause cancer in humans except under uncommon or unlikely routes or levels of exposure.

A4 Not classifiable as a human carcinogen: Agents which cause concern that they could be carcinogenic for humans but which cannot be assessed conclusively because of a lack of data. In vitro or animal studies do not provide indications of carcinogenicity which are sufficient to classify the agent into one of the other categories.

BEI Substances for which there is a Biological Exposure Index or Indices (see BEI® section)

Skin Danger of cutaneous absorption

Immediately Dangerous to Life or Health Concentrations (IDLH)

Substance name	CAS-No.	Control parameters	Update
Ethylbenzene	100-41-4	Immediately Dangerous to Life or Health Concentration Value 800 parts per million	1995-03-01
Benzene, dimethyl-	1330-20-7	Immediately Dangerous to Life or Health Concentration Value 900 parts per million	1995-03-01
Naphthalene	91-20-3	Immediately Dangerous to Life or Health Concentration Value 250 parts per million	1995-03-01

Engineering measures

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

Personal protective equipment

Respiratory protection : 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 Dusts and Mists / P100. 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.

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- 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 according to the amount and concentration of the dangerous substance at the work place. Wear as appropriate: Complete head face and neck protection. Rubber apron. Footwear protecting against chemicals.
- Hygiene measures : Avoid contact with skin, eyes and clothing. When using do not eat or drink. When using do not smoke. Wash hands before breaks and immediately after handling the product.

9. PHYSICAL AND CHEMICAL PROPERTIES**Information on basic physical and chemical properties****Appearance**

- Form : Liquid
Physical state : Liquid

Safety data

- Flash point : 87.8 °C (190.0 °F)
- Molecular formula : UVCB
- Molecular Weight : Not applicable
- Density : 0.92 g/cm³
at 15.6 °C (60.1 °F)

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

- Conditions to avoid : Heat, flames and sparks.
- Other data : No decomposition if stored and applied as directed.

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11. TOXICOLOGICAL INFORMATION

THE TOXICITY OF THIS MATERIAL HAS NOT BEEN FULLY ASSESSED

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Acute oral toxicity : LD50: > 2,000 mg/kg
Method: Acute toxicity estimate

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Acute inhalation toxicity : LC50: > 10 mg/l
Exposure time: 4 h
Test atmosphere: vapor
Method: Acute toxicity estimate

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Acute dermal toxicity : LD50: > 1,000 mg/kg
Method: Acute toxicity estimate

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Skin irritation : Acute dermal irritation/corrosion.

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Eye irritation : Risk of serious damage to eyes.

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Sensitization : May cause sensitization of susceptible persons by skin contact.

Repeated dose toxicity

n-Dodecyl Mercaptan : Species: rat
Application Route: Inhalation
Dose: 0, 0.43, 1.6, 7.3 ppm
Exposure time: 4 wk
NOEL: 0.01 mg/l 1.7 ppm
Lowest observable effect level: 0.06 mg/l 7.3 ppm
Target Organs: Skin

Species: dog
Application Route: Inhalation
Dose: 0, 0.44, 1.7, 7.7 ppm
Exposure time: 4 wk
NOEL: 1.7 ppm
Lowest observable effect level: 7.7 ppm

C12-C14 Isoalkanes : Species: Monkey
Dose: 0, 654 ppm
Exposure time: 4 wk
Number of exposures: 6 h/d, 3 d/wk
NOEL: > 654 ppm

Decant (clarified) Oils : Species: rat
Application Route: Dermal
Dose: 0, 8, 30, 125, 500 mg/kg
Exposure time: 13 wk

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	<p>Lowest observable effect level: 8 mg/kg Target Organs: Liver</p>
Light Cycle Oil	<p>Species: rat, males Sex: males Application Route: Dermal Dose: 0, 8, 25, 125, 500, 1250 mg/kg Exposure time: 90 day Number of exposures: 5 days/wk NOEL: 25 mg/kg Target Organs: Blood, Liver, Thymus</p> <p>Species: rat, females Sex: females Application Route: Dermal Dose: 0, 8, 25, 125, 500, 1250 mg/kg Exposure time: 90 day Number of exposures: 5 days/wk NOEL: 125 mg/kg Target Organs: Blood, Liver, Thymus</p>
tert-Dodecanethiol	<p>Species: rat Application Route: Inhalation Dose: 0, 26, 98 ppm Exposure time: 4 wk Number of exposures: 6 h/d, 5 d/wk NOEL: 26 ppm Lowest observable effect level: 98 ppm Method: OECD Test Guideline 407 Target Organs: Kidney</p> <p>Species: dog Application Route: Inhalation Dose: 0, 25, 109 ppm Exposure time: 4 wk Number of exposures: 6 h/d, 5 d/wk NOEL: 25 ppm Lowest observable effect level: 109 ppm Method: OECD Test Guideline 407 Target Organs: Liver</p> <p>Species: mouse Application Route: Inhalation Dose: 0, 25, 109 ppm Exposure time: 4 wk Number of exposures: 6 h/d, 5 d/wk Lowest observable effect level: 25 ppm Method: OECD Test Guideline 407 Target Organs: Liver, Reproductive organs</p>
tert-Nonanethiol	This information is not available.
n-Octyl Mercaptan	<p>Species: rat, males Sex: males Application Route: Oral Dose: 0, 10, 50, 250 mg/kg Exposure time: 35 D Number of exposures: once daily NOEL: 50 mg/kg Method: OECD Guideline 422</p>

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	<p>Species: rat, females Sex: females Application Route: Oral Dose: 0, 10, 50, 250 mg/kg Number of exposures: once daily NOEL: 50 mg/kg Method: OECD Guideline 422</p>
Ethylbenzene	<p>Species: rat, male Sex: male Application Route: Inhalation Dose: 200, 400, 600, 800 ppm Exposure time: 13 weeks Number of exposures: 6 hours/day, 6 days/week NOEL: 200 ppm Test substance: yes Target Organs: Ototoxicity</p>
Benzene, dimethyl-	<p>Species: rat Application Route: oral gavage Dose: 0, 62.5, 125, 250, 500, 1000... Exposure time: 13 wk Number of exposures: daily, 5 d/wk NOEL: 1,000 mg/kg</p> <p>Species: rat Application Route: Inhalation Dose: 0, 180, 460, 810 ppm Exposure time: 13 wk Number of exposures: 6 h/d, 5 d/wk NOEL: > 810 ppm</p> <p>Species: rat Application Route: Inhalation Dose: 0, 450, 900, 1800 ppm Exposure time: 13 wk Number of exposures: 6 h/d, 6 d/wk Lowest observable effect level: 900 ppm</p>

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Carcinogenicity : Method: Expected to be carcinogenic based on individual component data.

Reproductive toxicity

n-Octyl Mercaptan : Species: rat
Sex: male
Application Route: Oral diet
Dose: 0, 10, 50, 250 mg/kg
Exposure time: 35 D
Number of exposures: once daily
Method: OECD Guideline 422
NOAEL Parent: 250 mg/kg
NOAEL F1: 250 mg/kg

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Species: rat
 Sex: female
 Application Route: Oral diet
 Dose: 0, 10, 50, 250 mg/kg
 Number of exposures: once daily
 Method: OECD Guideline 422
 NOAEL Parent: 50 mg/kg
 NOAEL F1: 250 mg/kg

Teratogenicity

Decant (clarified) Oils

: Species: rat
 Application Route: Dermal
 Dose: 0, 4, 8, 30, 125, 250 mg/kg
 Number of exposures: daily
 Test period: GD 0-19
 NOAEL Teratogenicity: 4 mg/kg
 NOAEL Maternal: 4 mg/kg

Light Cycle Oil

Species: rat
 Application Route: Dermal
 Dose: 0, 25, 50, 125, 250, 500, 1...
 Number of exposures: daily
 Test period: GD 0-19
 NOAEL Maternal: 125 mg/kg

tert-Dodecanethiol

Species: rat
 Application Route: Inhalation
 Dose: 0, 22.7, 88.6 ppm
 Number of exposures: 6 hrs/d
 Test period: GD 6-19
 Method: OECD Guideline 414
 NOAEL Teratogenicity: > 88.6 ppm
 NOAEL Maternal: 22.7 ppm
 No adverse effects expected

n-Octyl Mercaptan

Species: rat
 Application Route: Oral diet
 Dose: 0, 10, 50, 250 mg/kg
 Number of exposures: once daily
 NOAEL Teratogenicity: 250 mg/kg

Benzene, dimethyl-

Species: rat
 Application Route: Inhalation
 Dose: 0, 805, 1610 ppm
 Number of exposures: 6 h/d
 Test period: GD 7-16
 NOAEL Maternal: 1610 ppm

Species: mouse
 Application Route: oral gavage
 Dose: 0, 780, 1960, 2619 mg/kg
 Number of exposures: 3 times/d
 Test period: GD 6-15
 NOAEL Teratogenicity: 780 mg/kg
 NOAEL Maternal: 780 mg/kg

Naphthalene

Species: rabbit
 Application Route: oral gavage

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Dose: 40, 200, 400 mg/kg
 Test period: 29 d, GD 6-18
 NOAEL Teratogenicity: 400 mg/kg

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

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CMR effects : Carcinogenicity:
 Presumed to have carcinogenic potential for humans

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Further information : Solvents may degrease the skin.

12. ECOLOGICAL INFORMATION**Ecotoxicity effects**

Toxicity to fish : Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Toxicity to daphnia and other aquatic invertebrates. : Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Toxicity to algae : Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

1,1-dimethylheptanethiol : 10

Toxicity to bacteria

tert-Dodecanethiol : NOEC: 8.6 mg/l
 Exposure time: 3 h
 Growth rate
 Respiration inhibition
 Method: OECD Test Guideline 209

Toxicity to daphnia and other aquatic invertebrates. (Chronic toxicity) : Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Elimination information (persistence and degradability)

Bioaccumulation : This material is not expected to bioaccumulate.

Biodegradability : Expected to be ultimately biodegradable

Ecotoxicology Assessment**Results of PBT assessment**

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This mixture contains no substance considered to be persistent, bioaccumulating nor toxic (PBT).
 Additional ecological information : Very toxic to aquatic life with long lasting effects.
 Information given is based on data on the ingredients and the ecotoxicology of similar products.

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
 Very toxic to aquatic life with long lasting effects.

13. DISPOSAL CONSIDERATIONS

The information in this MSDS 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.

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 MSDS and the bill of lading.

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

All transportation classifications should be determined at time of shipment.

15. REGULATORY INFORMATION**National legislation**

SARA 311/312 Hazards : Fire Hazard
 Acute Health Hazard
 Chronic Health Hazard

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CERCLA Reportable Quantity	: 2000 lbs Benzene, dimethyl-Naphthalene
SARA 302 Reportable Quantity	: This material does not contain any components with a SARA 302 RQ.
SARA 302 Threshold Planning Quantity	: SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.
SARA 304 Reportable Quantity	: This material does not contain any components with a section 304 EHS RQ.
SARA 313 Ingredients	: The following components are subject to reporting levels established by SARA Title III, Section 313:
	: Ethylbenzene 100-41-4
	: Benzene, dimethyl-Naphthalene 1330-20-7
	: 91-20-3

Clean Air Act

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

The following chemical(s) are listed as HAP under the U.S. Clean Air Act, Section 12 (40 CFR 61): : Ethylbenzene

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

Benzene, dimethyl-

US State Regulations

Pennsylvania Right To Know	: Distillates (petroleum), Hydrotreated light 64742-47-8
	: tert-Dodecanethiol 25103-58-6
	: tert-Nonanethiol 25360-10-5
	: n-Octyl Mercaptan 111-88-6
	: Ethylbenzene 100-41-4
	: Benzene, dimethyl- 1330-20-7
	: Naphthalene 91-20-3

New Jersey Right To Know

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: Distillates (petroleum), Hydrotreated light	64742-47-8
: n-Octyl Mercaptan	111-88-6
: Ethylbenzene	100-41-4
: Benzene, dimethyl-	1330-20-7
: Naphthalene	91-20-3

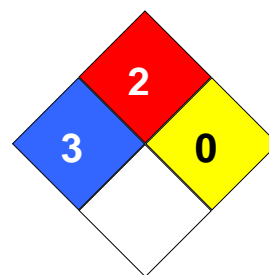
California Prop. 65
Ingredients : WARNING! This product contains a chemical known in the
State of California to cause cancer.

Notification status

Europe REACH	: A substance or substances in this product is not registered or notified to be registered. Importation or manufacture of this product is still permitted provided that it does not exceed the REACH minimum threshold quantity of the non-regulated substances.
United States of America US.TSCA	: On TSCA Inventory
Canada DSL	: All components of this product are on the Canadian DSL list.
Australia AICS	: On the inventory, or in compliance with the inventory
New Zealand NZIoC	: Not in compliance with the inventory
Japan ENCS	: Not in compliance with the inventory
Korea KECI	: Not in compliance with the inventory
Philippines PICCS	: Not in compliance with the inventory
China IECSC	: On the inventory, or in compliance with the inventory

16. OTHER INFORMATION

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

**Further information**

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

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

The information provided in this Material 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

Orfom® MC Collector Developmental

Version 1.9

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