

Orfom® MC5 Collector

Version 1.7

Revision Date 2023-09-19

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

Product Name : Orfom® MC5 Collector
 Material : 1118934, 1118933, 1118932, 1118921, 1118920, 1118888

Use : Mineral Collector
 Flotation processing reagent

Company : Chevron Phillips Chemical Company LP
 Mining Chemicals
 10001 Six Pines Drive
 The Woodlands, TX 77380

Emergency telephone:**Health:**

866.442.9628 (North America)

1.832.813.4984 (International)

Transport:

CHEMTREC 800.424.9300 or 703.527.3887(int'l)

Asia: CHEMWATCH (+612 9186 1132) China: 0532 8388 9090

Mexico CHEMTREC 01-800-681-9531 (24 hours)

South America SOS-Cotec Inside Brazil: 0800.111.767 Outside Brazil: +55.19.3467.1600

Argentina: +(54)-1159839431

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

Austria: VIZ +43 1 406 43 43 (24 hours/day, 7 days/week)

Belgium: 070 245 245 (24 hours/day, 7 days/week)

Bulgaria: +359 2 9154 233

Croatia: +3851 2348 342 (24 hours/day, 7 days/week)

Cyprus: 1401

Czech Republic: Toxicological Information Center +420 224 919 293, +420 224 915 402

Denmark: Danish Poison Center (Giftlinjen): +45 8212 1212

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

Finland: 0800 147 111 09 471 977 (24 hours/day)

France: ORFILA number (INRS): + 33 (0) 1 45 42 59 59 (24 hours/day, 7 days/week)

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

Greece: (0030) 2107793777 (24 hours/day, 7 days/week)

Hungary: +36-80-201-199 (24 hours/day, 7 days/week)

Iceland: 543 2222 (24 hours/day, 7 days/week)

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

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

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Latvia: State Fire and Rescue Service, phone number: 112; Toxicology and Sepsis Clinic Poisoning and Drug Information Center, Hipokrāta 2, Riga, Latvia, LV-1038, phone number +371 67042473. (24 hours.)

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

Lithuania: +370 (85) 2362052

Luxembourg: (+352) 8002 5500 (24 hours/day, 7 days/week)

Malta: +356 2395 2000

The Netherlands: NVIC: +31 (0)88 755 8000

Norway: 22 59 13 00 (24 hours/day, 7 days/week)

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

Portugal: CIAV phone number: +351 800 250 250

Romania: +40213183606

Slovakia: +421 2 5477 4166

Slovenia: Phone number: 112

Spain: National Emergency Telephone Number of Spanish Poison Centre: +34 91 562 04 20 (24 hours/day, 7 days/week)

Sweden: 112 – ask for Poisons Information

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

SECTION 2: Hazards identification**Classification of the substance or mixture**

This product has been classified in accordance with the hazard communication standard 29 CFR 1910.1200; the SDS and labels contain all the information as required by the standard.

Classification

: Skin sensitization, Category 1

Labeling

Symbol(s) :



Signal Word :

: Warning

Hazard Statements :

: H317: May cause an allergic skin reaction.

Precautionary Statements :

: **Prevention:**

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

P272 Contaminated work clothing must not be allowed out of the workplace.

P280 Wear protective gloves.

Response:

P302 + P352 IF ON SKIN: Wash with plenty of soap and water.

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

P363 Wash contaminated clothing before reuse.

Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

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Carcinogenicity:**IARC**

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

NTP

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

SECTION 3: Composition/information on ingredients

Synonyms : Methyl n-Dodecyl Sulfide

Molecular formula : C₁₃H₂₈S

Component	CAS-No.	Weight %
n-Dodecyl Methyl Sulfide	3698-89-3	95 - 99

SECTION 4: First aid measures

General advice : Move out of dangerous area. Show this material safety data sheet to the doctor in attendance. Material may produce a serious, potentially fatal pneumonia if swallowed or vomited.

If inhaled : If unconscious, place in recovery position and seek medical advice. If symptoms persist, call a physician.

In case of skin contact : If on skin, rinse well with water.

In case of eye contact : Flush eyes with water as a precaution. Remove contact lenses. Protect unharmed eye. Keep eye wide open while rinsing. If eye irritation persists, consult a specialist.

If swallowed : Keep respiratory tract clear. Never give anything by mouth to an unconscious person. If symptoms persist, call a physician. Take victim immediately to hospital.

SECTION 5: Firefighting measures

Flash point : 142°C (288°F)
Method: PMCC
estimated

Autoignition temperature : No data available

Unsuitable extinguishing media : High volume water jet.

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- Specific hazards during fire fighting : Do not allow run-off from fire fighting to enter drains or water courses.
- Special protective equipment for fire-fighters : Wear self-contained breathing apparatus for firefighting if necessary.
- Further information : Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
- Fire and explosion protection : Normal measures for preventive fire protection.

SECTION 6: Accidental release measures

- Personal precautions : Use personal protective equipment. Ensure adequate ventilation.
- 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 : Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Keep in suitable, closed containers for disposal.

SECTION 7: Handling and storage**Handling**

- Advice on safe handling : 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. 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 : Normal measures for preventive fire protection.

Storage

- Requirements for storage areas and containers : Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Observe label precautions. Electrical installations / working materials must comply with the technological safety standards.
- Use : Mineral Collector
Flotation processing reagent

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SECTION 8: Exposure controls/personal protection**Immediately Dangerous to Life or Health Concentrations (IDLH)**

Substance name	CAS-No.	Control parameters	Update
Methyl Mercaptan	74-93-1	Immediately Dangerous to Life or Health Concentration Value 150 parts per million	1995-03-01

Biological exposure indices**US**

Substance name	CAS-No.	Control parameters	Sampling time	Update
Methyl Mercaptan	74-93-1	Methemoglobin: 1.5 % Hb Nonspecific (In blood) Background () Semi-quantitative () See notice of Intended Changes (NIC) () Adopted values or notations enclosed are those for which changes are proposed in the NIC ()	During or at the end of the shift	2020-02-01

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 : If ventilation or other engineering controls are not adequate to maintain minimal oxygen content of 19.5% by volume under normal atmospheric pressure, a supplied-air NIOSH approved respirator may be appropriate. If exposure to harmful levels of airborne material may occur, a NIOSH approved respirator that provides protection may be appropriate, such as: A positive pressure, air-supplying respirator may be appropriate if there is potential for uncontrolled release, aerosolization, exposure levels are not known, or other circumstances where air-purifying respirators may not provide adequate protection.
- Hand protection : The suitability for a specific workplace should be discussed with the producers of the protective gloves. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time. Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.
- Eye protection : Eye wash bottle with pure water. Tightly fitting safety goggles.
- Skin and body protection : Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the

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specific work-place. Wear as appropriate:. Remove and wash contaminated clothing before re-use. Skin should be washed after contact. Footwear protecting against chemicals.

Hygiene measures : When using do not eat or drink. When using do not smoke. Wash hands before breaks and at the end of workday.

SECTION 9: Physical and chemical properties**Information on basic physical and chemical properties****Appearance**

Form : liquid
 Physical state : liquid
 Color : Colorless to light yellow
 Odor : pungent

Safety data

Flash point : 142°C (288°F)
 Method: PMCC
 estimated

Lower explosion limit : No data available

Upper explosion limit : No data available

Oxidizing properties : No

Autoignition temperature : No data available

Molecular formula : C₁₃H₂₈S

Molecular weight : 216.47 g/mol

pH : No data available

Freezing point : No data available

Boiling point/boiling range : 294-315°C (561-599°F)

Vapor pressure : No data available

Relative density : 0.835
 at 20 °C (68 °F)

Water solubility : insoluble

Viscosity, dynamic : 3.71 cP

Relative vapor density : No data available

Evaporation rate : No data available

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SECTION 10: Stability and reactivity

- Reactivity** : Stable under recommended storage conditions.
- Chemical stability** : This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.
- Possibility of hazardous reactions**
- Hazardous reactions** : Further information: No decomposition if stored and applied as directed.
- Conditions to avoid** : No data available.
- Other data** : No decomposition if stored and applied as directed.

SECTION 11: Toxicological information

- Orfom® MC5 Collector**
Acute oral toxicity : Acute toxicity estimate: 2,604 mg/kg
Method: Calculation method
- Orfom® MC5 Collector**
Skin irritation : May cause skin irritation and/or dermatitis.
- Orfom® MC5 Collector**
Eye irritation : Vapors may cause irritation to the eyes, respiratory system and the skin.
- Orfom® MC5 Collector**
Sensitization : Causes sensitization.
- Repeated dose toxicity**
n-Dodecyl Methyl Sulfide : Species: rat (male)
Application Route: oral gavage
Dose: 250, 500, 1000 mg/kg/d
Exposure time: 35 d
Number of exposures: daily
NOEL: 1,000 mg/kg
Method: OECD Guideline 422
No significant adverse effects were reported

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Species: rat (female)
 Application Route: oral gavage
 Dose: 250, 500, 1000 mg/kg/d
 Exposure time: 49 d
 Number of exposures: daily
 NOEL: 1,000 mg/kg
 Method: OECD Guideline 422
 No significant adverse effects were reported

Reproductive toxicity

n-Dodecyl Methyl Sulfide : Species: Rat
 Sex: male
 Application Route: oral gavage
 Dose: 0, 250, 500, 1000 mg/kg/d
 Exposure time: 35 d
 Method: OECD Guideline 422
 NOAEL Parent: 1,000 mg/kg
 Fertility and developmental toxicity tests did not reveal any effect on reproduction.

Species: Rat
 Sex: female
 Application Route: oral gavage
 Dose: 0, 250, 500, 1000 mg/kg/d
 Exposure time: 49 d
 Method: OECD Guideline 422
 NOAEL Parent: 1,000 mg/kg
 NOAEL F1: 1,000 mg/kg
 Fertility and developmental toxicity tests did not reveal any effect on reproduction.

Aspiration toxicity

n-Dodecyl Methyl Sulfide : May be harmful if swallowed and enters airways.

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Further information**

: Solvents may decrease the skin.

SECTION 12: Ecological information**Toxicity to fish**

n-Dodecyl Methyl Sulfide : LC50: 0.115 mg/l
 Exposure time: 96 h
 Species: Fish
 Method: QSAR modeled data

Toxicity to daphnia and other aquatic invertebrates

n-Dodecyl Methyl Sulfide : EC50: 24.5 µg/l
 Exposure time: 48 h
 Species: Daphnia magna (Water flea)
 semi-static test Method: OECD Test Guideline 202

M-Factor

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dodecyl methyl sulphide : M-Factor (Acute Aquat. Tox.) 1
 M-Factor (Chron. Aquat. Tox.) 1

Biodegradability

n-Dodecyl Methyl Sulfide : aerobic
 Result: Not readily biodegradable.
 18 %
 Testing period: 28 d
 Method: OECD Test Guideline 310

Additional ecological information : Very toxic to aquatic life with long lasting effects.

Ecotoxicology Assessment

Short-term (acute) aquatic hazard
 n-Dodecyl Methyl Sulfide : Very toxic to aquatic life.

Long-term (chronic) aquatic hazard
 n-Dodecyl Methyl Sulfide : Very toxic to aquatic life with long lasting effects.

SECTION 13: Disposal considerations

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

Use material for its intended purpose or recycle if possible. This material, if it must be discarded, may meet the criteria of a hazardous waste as defined by US EPA under RCRA (40 CFR 261) or other State and local regulations. Measurement of certain physical properties and analysis for regulated components may be necessary to make a correct determination. If this material is classified as a hazardous waste, federal law requires disposal at a licensed hazardous waste disposal facility.

Product : The product should not be allowed to enter drains, water courses or the soil. Do not contaminate ponds, waterways or ditches with chemical or used container. Send to a licensed waste management company.

Contaminated packaging : Empty remaining contents. Dispose of as unused product. Do not re-use empty containers.

SECTION 14: Transport information

The shipping descriptions shown here are for bulk shipments only, and may not apply to shipments in non-bulk packages (see regulatory definition).

Consult the appropriate domestic or international mode-specific and quantity-specific Dangerous Goods Regulations for additional shipping description requirements (e.g., technical name or names, etc.) Therefore, the information shown here, may not always agree with the bill of lading shipping description for the material. Flashpoints for the material may vary slightly between the SDS and the bill of lading.

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US DOT (UNITED STATES DEPARTMENT OF TRANSPORTATION)

UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S., (N-DODECYL METHYL SULFIDE), 9, III, MARINE POLLUTANT, (N-DODECYL METHYL SULFIDE)

IMO / IMDG (INTERNATIONAL MARITIME DANGEROUS GOODS)

UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S., (N-DODECYL METHYL SULFIDE), 9, III, (142 °C c.c.), MARINE POLLUTANT, (N-DODECYL METHYL SULFIDE)

IATA (INTERNATIONAL AIR TRANSPORT ASSOCIATION)

UN3334, AVIATION REGULATED LIQUID, N.O.S., (N-DODECYL METHYL SULFIDE), 9, III

ADR (AGREEMENT ON DANGEROUS GOODS BY ROAD (EUROPE))

UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S., (N-DODECYL METHYL SULFIDE), 9, III, (-)

RID (REGULATIONS CONCERNING THE INTERNATIONAL TRANSPORT OF DANGEROUS GOODS (EUROPE))

90, UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S., (N-DODECYL METHYL SULFIDE), 9, III

ADN (EUROPEAN AGREEMENT CONCERNING THE INTERNATIONAL CARRIAGE OF DANGEROUS GOODS BY INLAND WATERWAYS)

UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S., (N-DODECYL METHYL SULFIDE), 9, III

Maritime transport in bulk according to IMO instruments**SECTION 15: Regulatory information****National legislation****SARA 311/312 Hazards** : Respiratory or skin sensitizationCERCLA Reportable Quantity : Calculated RQ exceeds reasonably attainable upper limit.
Methyl MercaptanSARA 302 Reportable Quantity : Calculated RQ exceeds reasonably attainable upper limit.
Methyl Mercaptan

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

SARA 304 Reportable Quantity : Calculated RQ exceeds reasonably attainable upper limit.

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Methyl Mercaptan 74-93-1

100 lbs

SARA 313 Components : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

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).

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).

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

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCM I Intermediate or Final VOC's (40 CFR 60.489).

US State Regulations**Pennsylvania Right To Know**

: n-Dodecyl Methyl Sulfide - 3698-89-3
 sec-dodecyl methyl sulfide (C13) -
 Methyl Mercaptan - 74-93-1

California Prop. 65 Components

: This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.

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.

Switzerland CH INV

: Not in compliance with the inventory

United States of America (USA)

: On or in compliance with the active portion of the TSCA inventory

TSCA**Canada NDSL**

: This product contains one or several components listed in the Canadian NDSL.

Australia AIIC

: Not in compliance with the inventory

New Zealand NZIoC

: Not in compliance with the inventory

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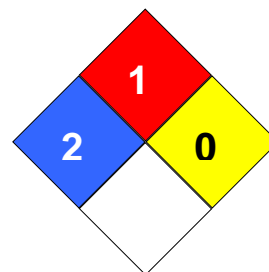
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Japan ENCS	:	Not in compliance with the inventory
Philippines PICCS	:	On the inventory, or in compliance with the inventory
Taiwan TCSI	:	On the inventory, or in compliance with the inventory
Korea KECI	:	A substance(s) in this product was not registered, notified to be registered, or exempted from registration by CPChem according to K-REACH regulations. Importation or manufacture of this product is still permitted provided the Korean Importer of Record has themselves notified the substance or the exported amount does not exceed the minimum threshold quantity of the non-registered substance(s).
		Notification number: KE-12991
China IECSC	:	Not in compliance with the inventory

SECTION 16: Other information

NFPA Classification : Health Hazard: 2
Fire Hazard: 1
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 SDS pertains only to the product as shipped.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Key or legend to abbreviations and acronyms used in the safety data sheet

ACGIH	American Conference of Government Industrial Hygienists	LD50	Lethal Dose 50%
AIIC	Australian Inventory of Industrial Chemicals	LOAEL	Lowest Observed Adverse Effect Level
DSL	Canada, Domestic Substances List	NFPA	National Fire Protection Agency
NDSL	Canada, Non-Domestic Substances List	NIOSH	National Institute for Occupational Safety & Health
CNS	Central Nervous System	NTP	National Toxicology Program
CAS	Chemical Abstract Service	NZIoC	New Zealand Inventory of Chemicals
EC50	Effective Concentration	NOAEL	No Observable Adverse Effect Level
EC50	Effective Concentration 50%	NOEC	No Observed Effect Concentration
EGEST	EOSCA Generic Exposure Scenario Tool	OSHA	Occupational Safety & Health Administration
EOSCA	European Oilfield Specialty Chemicals Association	PEL	Permissible Exposure Limit
EINECS	European Inventory of Existing	PICCS	Philippines Inventory of

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	Chemical Substances		Commercial Chemical Substances
MAK	Germany Maximum Concentration Values	PRNT	Presumed Not Toxic
GHS	Globally Harmonized System	RCRA	Resource Conservation Recovery Act
>=	Greater Than or Equal To	STEL	Short-term Exposure Limit
IC50	Inhibition Concentration 50%	SARA	Superfund Amendments and Reauthorization Act.
IARC	International Agency for Research on Cancer	TLV	Threshold Limit Value
IECSC	Inventory of Existing Chemical Substances in China	TWA	Time Weighted Average
ENCS	Japan, Inventory of Existing and New Chemical Substances	TSCA	Toxic Substance Control Act
KECI	Korea, Existing Chemical Inventory	UVCB	Unknown or Variable Composition, Complex Reaction Products, and Biological Materials
<=	Less Than or Equal To	WHMIS	Workplace Hazardous Materials Information System
LC50	Lethal Concentration 50%	ATE	Acute toxicity estimate