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

Product information

Product Name: Orfom® MCX Flotation Oil
Material: 1121555, 1118476, 1118475, 1117264, 1110866, 1016872

Company: Chevron Phillips Chemical Company LP
Specialty 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
EUROPE: BIG +32.14.584545 (phone) or +32.14583516 (telefax)
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

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

SECTION 2: Hazards identification

GHS Classification and Labelling: Follow GB 13690, GB 15258 and GB 30000.2 to GB 30000.29 (GHS 2011)

Emergency Overview

Danger
Form: Liquid  Physical state: Liquid  Color: Colorless  Odor: Mild
Hazard: May be fatal if swallowed and enters airways.
Orfom® MCX Flotation Oil

Version 1.4

Classification

: Aspiration hazard, Category 1

Labeling

Symbol(s):

: 

Signal Word:

: Danger

Hazard Statements:

: H304: May be fatal if swallowed and enters airways.

Precautionary Statements:

Response:

P301+P310: IF SWALLOWED: Immediately call a POISON CENTER/doctor.
P331: Do NOT induce vomiting.

Storage:

P405: Store locked up.

Disposal:

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

SECTION 3: Composition/information on ingredients

Synonyms:

: Flotation Oil

Molecular formula:

: UVCB

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS-No. / EINECS-No.</th>
<th>Concentration [wt%]</th>
</tr>
</thead>
<tbody>
<tr>
<td>C13-C16 Isoalkanes</td>
<td>68551-20-2</td>
<td>99 - 100</td>
</tr>
</tbody>
</table>

SECTION 4: First aid measures

General advice:

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

If inhaled:

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

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 : 79°C (174°F)
Method: ASTM D 93

Autoignition temperature : No data available

Unsuitable extinguishing media : High volume water jet.

Special protective equipment for fire-fighters : Wear self-contained breathing apparatus for firefighting if necessary.

Further information : Standard procedure for chemical fires. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Fire and explosion protection : Normal measures for preventive fire protection.

Hazardous decomposition products : Carbon oxides.

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. 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.

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. Observe label precautions. Electrical installations / working materials must comply with the technological safety standards.
SECTION 8: Exposure controls/personal protection

Not applicable

**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:. Use a positive pressure, air-supplying respirator if there is potential for uncontrolled release, exposure levels are not known, or other circumstances where air-purifying respirators may not provide adequate protection.

**Hand protection**: The suitability for a specific workplace should be discussed with the producers of the protective gloves. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time. Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.

**Eye protection**: Eye wash bottle with pure water. Tightly fitting safety goggles.

**Skin and body protection**: Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place. Wear as appropriate:. Protective suit. Safety shoes.

**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
- **Odor**: Mild

SDS Number: 100000013327
## Safety data

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flash point</td>
<td>79°C (174°F) Method: ASTM D 93</td>
</tr>
<tr>
<td>Lower explosion limit</td>
<td>No data available</td>
</tr>
<tr>
<td>Upper explosion limit</td>
<td>No data available</td>
</tr>
<tr>
<td>Oxidizing properties</td>
<td>No</td>
</tr>
<tr>
<td>Autoignition temperature</td>
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<td>Molecular formula</td>
<td>UVCB</td>
</tr>
<tr>
<td>Molecular weight</td>
<td>Not applicable</td>
</tr>
<tr>
<td>pH</td>
<td>7</td>
</tr>
<tr>
<td>Pour point</td>
<td>No data available</td>
</tr>
<tr>
<td>Boiling point/boiling range</td>
<td>214.4-316°C (417.9-601°F)</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>0.36 MMHG at 37.8°C (100.0°F)</td>
</tr>
<tr>
<td>Relative density</td>
<td>0.79 at 15.6 °C (60.1 °F)</td>
</tr>
<tr>
<td>Density</td>
<td>794.5 g/l</td>
</tr>
<tr>
<td>Water solubility</td>
<td>Negligible</td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity, kinematic</td>
<td>3.3 cSt at 38°C (100°F)</td>
</tr>
<tr>
<td>Relative vapor density</td>
<td>1 (Air = 1.0)</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>&lt; 1</td>
</tr>
</tbody>
</table>

## 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

Hazardous reactions: Hazardous polymerization does not occur.

Further information: No decomposition if stored and applied as directed.

### Conditions to avoid

No data available.

### Materials to avoid

May react with oxygen and strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.

### Hazardous decomposition products

Carbon oxides

### Other data

No decomposition if stored and applied as directed.

### SECTION 11: Toxicological information

#### Acute oral toxicity

C13-C16 Isoalkanes: LD50: > 5,000 mg/kg  
Species: Rat  
Sex: male and female  
Method: OECD Test Guideline 401  
Information given is based on data obtained from similar substances.

#### Acute inhalation toxicity

C13-C16 Isoalkanes: LC50: > 5.3 mg/l  
Exposure time: 4 h  
Species: Rat  
Sex: male and female  
Test atmosphere: dust/mist  
Method: OECD Test Guideline 403  
An LC50/inhalation/4h/rat could not be determined because no mortality of rats was observed at the maximum achievable concentration. Information given is based on data obtained from similar substances.

#### Acute dermal toxicity

C13-C16 Isoalkanes: LD50: > 2,000 mg/kg  
Species: Rabbit  
Sex: male and female  
Method: OECD Test Guideline 402  
Information given is based on data obtained from similar substances.

#### Skin irritation

C13-C16 Isoalkanes: Repeated exposure may cause skin dryness or cracking. May irritate skin. Information given is based on data obtained from similar substances.
Eye irritation
C13-C16 Isoalkanes: No eye irritation
Information given is based on data obtained from similar substances.

Sensitization
C13-C16 Isoalkanes: Classification: Did not cause sensitization on laboratory animals.
Information given is based on data obtained from similar substances.

Repeated dose toxicity
C13-C16 Isoalkanes:
Species: Rat, male and female
Sex: male and female
Application Route: oral gavage
Exposure time: 13 wk
Number of exposures: 7 d/wk
NOEL: > 5,000 mg/kg
Method: OECD Test Guideline 408
No significant adverse effects were reported
Information given is based on data obtained from similar substances.

Species: Rat, male and female
Sex: male and female
Application Route: Inhalation
Exposure time: 13 wk
Number of exposures: 6 h/d
NOEL: 30 mg/l
Method: OECD Test Guideline 413
No significant adverse effects were reported
Information given is based on data obtained from similar substances.

Species: Rat, male and female
Sex: male and female
Application Route: Dermal
Exposure time: 13 wk
Number of exposures: 5 d/wk
NOEL: > 495 mg/kg
Method: OECD Test Guideline 411
No significant adverse effects were reported
Information given is based on data obtained from similar substances.

Genotoxicity in vitro
C13-C16 Isoalkanes:
Test Type: Reverse mutation assay
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative
Remarks: Information given is based on data obtained from similar substances.
**Test Type:** Cytogenetic assay  
**Test system:** Chinese hamster cells  
**Metabolic activation:** with and without metabolic activation  
**Method:** OECD Test Guideline 473  
**Result:** negative  
**Remarks:** Information given is based on data obtained from similar substances.

**Test Type:** Mouse lymphoma assay  
**Metabolic activation:** with and without metabolic activation  
**Method:** OECD Test Guideline 476  
**Result:** negative  
**Remarks:** Information given is based on data obtained from similar substances.

### Reproductive toxicity

C13-C16 Isoalkanes  
- **Species:** Rat  
- **Sex:** male and female  
- **Application Route:** oral gavage  
- **Dose:** 50, 100, 750 mg/kg/d  
- **Exposure time:** 70 d  
- **Number of exposures:** Daily  
- **Method:** OECD Test Guideline 416  
- **NOAEL Parent:** \( \geq 750 \) mg/kg  
- **NOAEL F1:** \( \geq 750 \) mg/kg  
- **No adverse effects expected**  
**Information given is based on data obtained from similar substances.**

### CMR effects

C13-C16 Isoalkanes  
- **Carcinogenicity:** Not available  
- **Mutagenicity:** In vitro tests did not show mutagenic effects  
- **Reproductive toxicity:** No evidence of adverse effects on sexual function and fertility, or on development, based on animal experiments.

**Orfom® MCX Flotation Oil**  
**Aspiration toxicity**  
- **May be fatal if swallowed and enters airways.**

**Further information**  
- **Solvents may degrease the skin.**

### Toxicity to fish

C13-C16 Isoalkanes  
- **LL50:** \( \geq 1,000 \) mg/l  
- **Exposure time:** 96 h  
- **Species:** Oncorhynchus mykiss (rainbow trout)  
- **Method:** OECD Test Guideline 203  
**Information given is based on data obtained from similar substances.**
## Toxicity to daphnia and other aquatic invertebrates

<table>
<thead>
<tr>
<th>C13-C16 Isoalkanes</th>
<th>EL50: &gt; 1,000 mg/l</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Exposure time: 48 h</td>
</tr>
<tr>
<td></td>
<td>Species: Daphnia magna (Water flea)</td>
</tr>
<tr>
<td></td>
<td>Immobilization Method: OECD Test Guideline 202</td>
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<td></td>
<td>Information given is based on data obtained from similar substances.</td>
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</table>

## Toxicity to algae

<table>
<thead>
<tr>
<th>C13-C16 Isoalkanes</th>
<th>EL50: &gt; 1,000 mg/l</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Exposure time: 72 h</td>
</tr>
<tr>
<td></td>
<td>Species: Pseudokirchneriella subcapitata (green algae)</td>
</tr>
<tr>
<td></td>
<td>Growth inhibition Method: OECD Test Guideline 201</td>
</tr>
<tr>
<td></td>
<td>Information given is based on data obtained from similar substances.</td>
</tr>
</tbody>
</table>

## Toxicity to bacteria

<table>
<thead>
<tr>
<th>C13-C16 Isoalkanes</th>
<th>&gt; 100 mg/l</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>Exposure time: 3 h</td>
</tr>
<tr>
<td></td>
<td>Respiration inhibition Method: OECD Test Guideline 209</td>
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<tr>
<td></td>
<td>Information given is based on data obtained from similar substances.</td>
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</table>

## Biodegradability

<table>
<thead>
<tr>
<th>C13-C16 Isoalkanes</th>
<th>aerobic</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Result: Readily biodegradable.</td>
</tr>
<tr>
<td></td>
<td>74 %</td>
</tr>
<tr>
<td></td>
<td>Testing period: 28 d</td>
</tr>
<tr>
<td></td>
<td>Method: OECD Test Guideline 306</td>
</tr>
<tr>
<td></td>
<td>Information given is based on data obtained from similar substances.</td>
</tr>
</tbody>
</table>

## Mobility

<table>
<thead>
<tr>
<th>C13-C16 Isoalkanes</th>
<th>immobile</th>
</tr>
</thead>
</table>

## Results of PBT assessment

C13-C16 Isoalkanes: Non-classified PBT substance, Non-classified vPvB substance

## Additional ecological information

<table>
<thead>
<tr>
<th>Ecotoxicology Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Short-term (acute) aquatic hazard</td>
</tr>
<tr>
<td>C13-C16 Isoalkanes: This product has no known ecotoxicological effects.</td>
</tr>
<tr>
<td>Long-term (chronic) aquatic hazard</td>
</tr>
</tbody>
</table>
C13-C16 Isoalkanes : This product has no known ecotoxicological 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 : Do not dispose of waste into sewer. 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.

US DOT (UNITED STATES DEPARTMENT OF TRANSPORTATION)
NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

IMO / IMDG (INTERNATIONAL MARITIME DANGEROUS GOODS)
NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

IATA (INTERNATIONAL AIR TRANSPORT ASSOCIATION)
NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

ADR (AGREEMENT ON DANGEROUS GOODS BY ROAD (EUROPE))
NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

RID (REGULATIONS CONCERNING THE INTERNATIONAL TRANSPORT OF DANGEROUS GOODS (EUROPE))
NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.
ADN (EUROPEAN AGREEMENT CONCERNING THE INTERNATIONAL CARRIAGE OF DANGEROUS GOODS BY INLAND WATERWAYS)
NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

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

SECTION 15: Regulatory information

Notification status
Europe REACH : This product is in full compliance according to REACH regulation 1907/2006/EC.
Switzerland CH INV : On the inventory, or in compliance with the inventory
United States of America (USA) TSCA : All substances listed as active on the TSCA inventory
Canada DSL : All components of this product are on the Canadian DSL
Australia AICS : On the inventory, or in compliance with the inventory
New Zealand NZIoC : On the inventory, or in compliance with the inventory
Japan ENCS : On the inventory, or in compliance with the inventory
Philippines PICCS : On the inventory, or in compliance with the inventory
China IECSC : 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.
Korea KECI :
Taiwan TCSI : On the inventory, or in compliance with the inventory

Other regulations : Law on the Prevention and Control of Occupational Diseases

SECTION 16: Other information

Further information
Legacy SDS Number : 250860

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

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

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

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