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

Product information
Product Name: AlphaPlus® C20-24
Material: 1037057, 1083291, 1059406, 1059404, 1036985, 1037058

Company: Chevron Phillips Chemical Company LP
Normal Alpha Olefins (NAO)
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

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: 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 or doctor/physician.
P331 Do NOT induce vomiting.
Storage:
P405 Store locked up.
Disposal:
P501 Dispose of contents/container to an approved waste disposal plant.

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:
- NAO 20-24
- C20-24 Alpha Olefin Fraction

Molecular formula: UVCB

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alkenes, C20-24 α-</td>
<td>93924-10-8</td>
<td>100</td>
</tr>
<tr>
<td>1-Eicosene</td>
<td>3452-07-1</td>
<td>35 - 55</td>
</tr>
<tr>
<td>1-Docosene</td>
<td>1599-67-3</td>
<td>25 - 45</td>
</tr>
<tr>
<td>1-Tetracosene</td>
<td>10192-32-2</td>
<td>10 - 26</td>
</tr>
<tr>
<td>1-Hexacosene</td>
<td>18835-33-1</td>
<td>0 - 2</td>
</tr>
<tr>
<td>1-Octadecene</td>
<td>112-88-9</td>
<td>0 - 0.1</td>
</tr>
</tbody>
</table>

SECTION 4: First aid measures

General advice: No hazards which require special first aid measures.
If inhaled: If unconscious, place in recovery position and seek medical advice. If symptoms persist, call a physician.
In case of skin contact: If skin irritation persists, call a physician. If on skin, rinse well with water. If on clothes, remove clothes.
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. Do not give milk or alcoholic beverages. Never give anything by mouth to an unconscious person.
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AlphaPlus® C20-24

Version 1.7
Revision Date 2019-12-04

person. If symptoms persist, call a physician.

SECTION 5: Firefighting measures

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flash point</td>
<td>183°C (361°F)</td>
</tr>
<tr>
<td>Method</td>
<td>PMCC</td>
</tr>
<tr>
<td>Autoignition temperature</td>
<td>239°C (462°F)</td>
</tr>
<tr>
<td>Unsuitable extinguishing media</td>
<td>High volume water jet.</td>
</tr>
<tr>
<td>Specific hazards during firefighting</td>
<td>Standard procedure for chemical fires. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.</td>
</tr>
<tr>
<td>Special protective equipment for fire-fighters</td>
<td>Wear self-contained breathing apparatus for firefighting if necessary.</td>
</tr>
<tr>
<td>Further information</td>
<td>Standard procedure for chemical fires. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.</td>
</tr>
<tr>
<td>Fire and explosion protection</td>
<td>Provide appropriate exhaust ventilation at places where dust is formed.</td>
</tr>
</tbody>
</table>

SECTION 6: Accidental release measures

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal precautions</td>
<td>Use personal protective equipment. Avoid dust formation. Avoid breathing dust.</td>
</tr>
<tr>
<td>Environmental precautions</td>
<td>Prevent further leakage or spillage if safe to do so. If the product contaminates rivers and lakes or drains inform respective authorities.</td>
</tr>
<tr>
<td>Methods for cleaning up</td>
<td>Keep in suitable, closed containers for disposal.</td>
</tr>
</tbody>
</table>

SECTION 7: Handling and storage

**Handling**

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advice on safe handling</td>
<td>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.</td>
</tr>
<tr>
<td>Advice on protection against fire and explosion</td>
<td>Provide appropriate exhaust ventilation at places where dust is formed.</td>
</tr>
</tbody>
</table>

**Storage**

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Requirements for storage areas and containers</td>
<td>Keep container tightly closed in a dry and well-ventilated place. Electrical installations / working materials must comply with the</td>
</tr>
</tbody>
</table>
SECTION 8: Exposure controls/personal protection

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 Organic Vapors, Dusts and Mists. 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. Safety glasses.

Skin and body protection: Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific workplace. 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: Wax, Solid
Physical state: Solid
Color: White

Safety data
SDS Number: 100000068831
### Flash point
- **Value**: 183°C (361°F)
- **Method**: PMCC

### Lower explosion limit
- **Value**: No data available

### Upper explosion limit
- **Value**: No data available

### Oxidizing properties
- **Value**: No

### Autoignition temperature
- **Value**: 239°C (462°F)

### Molecular formula
- **Value**: UVCB

### Molecular weight
- **Value**: Varies

### pH
- **Value**: Not applicable

### Melting point/range
- **Value**: 35°C (95°F)

### Pour point
- **Value**: No data available

### Boiling point/boiling range
- **Value**: 342-390°C (648-734°F)

### Vapor pressure
- **Value**: < 0.01 kPa
  - **Conditions**: at 65°C (149°F)

### Relative density
- **Value**: 0.8
  - **Conditions**: at 15.6 °C (60.1 °F)

### Density
- **Value**: 815 kg/m³
  - **Conditions**: at 15°C (59°F)

- **Value**: 792 kg/m³
  - **Conditions**: at 50°C (122°F)

### Water solubility
- **Value**: Soluble in hydrocarbon solvents; insoluble in water.

### Partition coefficient: n-octanol/water
- **Value**: No data available

### Viscosity, kinematic
- **Value**: 6.356 cSt
  - **Conditions**: at 40°C (104°F)

### Relative vapor density
- **Value**: Not applicable

### Evaporation rate
- **Value**: Not applicable

### SECTION 10: Stability and reactivity

**Reactivity**: Stable at normal ambient temperature and pressure.
**AlphaPlus® C20-24**

**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.

**Materials to avoid**
- No data available.

**Other data**
- No decomposition if stored and applied as directed.

### SECTION 11: Toxicological information

**AlphaPlus® C20-24**

**Acute oral toxicity**
- LD50 Oral: > 5,000 mg/kg
  - Species: Rat
  - Sex: male and female
  - Method: OECD Test Guideline 423
  - Test substance: yes

**Acute inhalation toxicity**
- LC50: 110.1 mg/LExposure time: 4 h
  - Species: Rat
  - Sex: male
  - Test atmosphere: vapor
  - Method: OECD Test Guideline 403
  - Information given is based on data obtained from similar substances.

**Acute dermal toxicity**
- LD50 Dermal: > 2,000 mg/kg
  - Species: Rat
  - Sex: male and female
  - Method: OECD Test Guideline 402
  - Information given is based on data obtained from similar substances.

**Skin irritation**
- No skin irritation.

**Eye irritation**
- No eye irritation. Information given is based on data obtained from similar substances.

**Sensitization**
- Did not cause sensitization on laboratory animals.

**Repeated dose toxicity**
Alkenes, C20-24 α- 
Species: Rat, Male and female 
Sex: Male and female 
Application Route: oral gavage 
Dose: 100, 500, 1000 mg/kg/d 
Exposure time: 42-51 days 
Number of exposures: Daily 
NOEL: 1000 mg/kg bw/day 
Method: OECD Guideline 422 

1-Octadecene 
Species: rat (female) 
Application Route: oral gavage 
Dose: 0, 100, 500, 1000 mg/kg/d 
NOEL: 1,000 mg/kg 
Method: OECD Guideline 422 
Information given is based on data obtained from similar substances. 

Genotoxicity in vitro 
Alkenes, C20-24 α- 
Test Type: Ames test 
Metabolic activation: with and without metabolic activation 
Result: negative 

Test Type: Ames test 
Metabolic activation: with and without metabolic activation 
Result: negative 

Test Type: Mammalian cell gene mutation assay 
Metabolic activation: with and without metabolic activation 
Method: OECD Guideline 476 
Result: negative 

Test Type: Chromosome aberration test in vitro 
Result: negative 

1-Octadecene 
Test Type: Ames test 
Metabolic activation: with and without metabolic activation 
Method: OECD Test Guideline 471 
Result: negative
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Test Type: Chromosome aberration test in vitro
Test system: rodent hepatocytes
Method: OECD Test Guideline 473
Result: negative

Genotoxicity in vivo

Alkenes, C20-24 α- : Test Type: Mouse micronucleus assay
Species: Mouse
Exposure time: 500, 1,000, 2,000 mg/kg
Method: Mutagenicity (micronucleus test)
Result: negative

Reproductive toxicity

Alkenes, C20-24 α- : Species: Rat
Sex: male and female
Application Route: oral gavage
Dose: 100, 500, 1000 mg/kg/day
Number of exposures: Daily
Test period: 41-55 days
Method: OECD Guideline 422
NOAEL Parent: 1000 mg/kg bw/day
NOAEL F1: 1000 mg/kg bw/day

1-Octadecene : Species: Rat
Sex: male and female
Application Route: oral gavage
Dose: 0, 100, 500, 1000 mg/kg/d
Number of exposures: Daily
Test period: 42-51 days
Method: OECD Guideline 421
NOAEL Parent: 1000 mg/kg bw/day
NOAEL F1: 1000 mg/kg bw/day

Information given is based on data obtained from similar substances.

AlphaPlus® C20-24
Aspiration toxicity : May be fatal if swallowed and enters airways.

CMR effects

Alkenes, C20-24 α- : Carcinogenicity: Not available
Mutagenicity: Did not show mutagenic effects in animal
AlphaPlus® C20-24

Teratogenicity: Did not show teratogenic effects in animal experiments.
Reproductive toxicity: No toxicity to reproduction

1-Octadecene
Carcinogenicity: Not available
Mutagenicity: Tests on bacterial or mammalian cell cultures did not show mutagenic effects.
Teratogenicity: Not available
Reproductive toxicity: No toxicity to reproduction

Further information: No data available.

SECTION 12: Ecological information

Ecotoxicity effects

Toxicity to fish
LL50: > 1,000 mg/l
Exposure time: 96 h
Species: Oncorhynchus mykiss (rainbow trout)
semi-static test Method: OECD Test Guideline 203
The product has low solubility in the test medium. An aqueous dispersion was tested.

Toxicity to daphnia and other aquatic invertebrates
EL50: 1,000 mg/l
Exposure time: 48 h
Species: Daphnia magna (Water flea)
static test Method: OECD Test Guideline 202

Toxicity to algae
EL50: > 1,000 mg/l
Exposure time: 72 h
Species: Selenastrum capricornutum (algae)
static test Method: OECD Test Guideline 201
The product has low solubility in the test medium. An aqueous dispersion was tested.

Toxicity to bacteria
1-Octadecene
NOEC: 3 mg/l
Exposure time: 120 h
Respiration inhibition

Biodegradability
This material is expected to be readily biodegradable.
Information given is based on data obtained from similar substances.

Elimination information (persistence and degradability)

Bioaccumulation
This material is not expected to bioaccumulate.
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Mobility : No data available

Results of PBT assessment : This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Additional ecological information

Ecotoxicology Assessment

Short-term (acute) aquatic hazard : This material is not expected to be harmful to aquatic organisms.

Long-term (chronic) aquatic hazard : This material is not expected to be harmful to aquatic organisms.

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**

**National legislation**

**SARA 311/312 Hazards** : Aspiration hazard

**CERCLA Reportable Quantity** : This material does not contain any components with a CERCLA RQ.

**SARA 302 Reportable Quantity** : This material does not contain any components with a SARA 302 RQ.

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

**SARA 304 Reportable Quantity** : This material does not contain any components with a section 304 EHS RQ.

**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 SOCMI Intermediate or Final VOC’s (40 CFR 60.489).

US State Regulations

Pennsylvania Right To Know : Alkenes, C20-24 α- - 93924-10-8
1-Eicosene - 3452-07-1
1-Docosene - 1599-67-3
1-Tetracosene - 10192-32-2

California Prop. 65 Components : This product, as shipped, does not contain any carcinogens or reproductive toxins presently known by the State of California to cause cancer or reproductive toxicity at a level of exposure subject to the requirements of California Proposition 65.

Notification status

Europe REACH : This product is in full compliance according to REACH regulation 1907/2006/EC.

United States of America (USA) TSCA : On or in compliance with the active portion of the TSCA inventory

Canada DSL : On the inventory, or in compliance with the inventory

Australia AICS : On the inventory, or in compliance with the inventory

New Zealand NZIoC : This substance may be used as a component in a product covered by a group standard but it is not approved for use as a chemical in its own right

Japan ENCS : 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.

Philippines PICCS : On the inventory, or in compliance with the inventory
China IECSC : On the inventory, or in compliance with the inventory
Taiwan TCSI : On the inventory, or in compliance with the inventory

SECTION 16: Other information

NFPA Classification : Health Hazard: 0
Fire Hazard: 1
Reactivity Hazard: 0

Further information
Legacy SDS Number : PE0025

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% |
| 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 |

SDS Number: 100000068831
<table>
<thead>
<tr>
<th>Act</th>
<th>Definition</th>
<th>Acronym</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;=</td>
<td>Greater Than or Equal To</td>
<td>STEL</td>
<td>Short-term Exposure Limit</td>
</tr>
<tr>
<td>IC50</td>
<td>Inhibition Concentration 50%</td>
<td>SARA</td>
<td>Superfund Amendments and Reauthorization Act</td>
</tr>
<tr>
<td>IARC</td>
<td>International Agency for Research on Cancer</td>
<td>TLV</td>
<td>Threshold Limit Value</td>
</tr>
<tr>
<td>IECSC</td>
<td>Inventory of Existing Chemical Substances in China</td>
<td>TWA</td>
<td>Time Weighted Average</td>
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<tr>
<td>ENCS</td>
<td>Japan, Inventory of Existing and New Chemical Substances</td>
<td>TSCA</td>
<td>Toxic Substance Control Act</td>
</tr>
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<td>KECI</td>
<td>Korea, Existing Chemical Inventory</td>
<td>UVCB</td>
<td>Unknown or Variable Composition, Complex Reaction Products, and Biological Materials</td>
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<tr>
<td>&lt;=</td>
<td>Less Than or Equal To</td>
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<td>Workplace Hazardous Materials Information System</td>
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<td>LC50</td>
<td>Lethal Concentration 50%</td>
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