

**n-Decyl Mercaptan**

Version 2.2

Revision Date 2022-08-12

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

Product Name : n-Decyl Mercaptan
Material : 1093899, 1021533, 1021530, 1021531, 1021535, 1021536,
1021537, 1021532, 1021534

Use : Chemical intermediate

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

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 corrosion, Category 1C
 Serious eye damage, Category 1
 Skin sensitization, Sub-category 1A

Labeling

Symbol(s) :



Signal Word :

Danger

Hazard Statements :

H314: Causes severe skin burns and eye damage.
 H317: May cause an allergic skin reaction.

Precautionary Statements :

Prevention:

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

P264 Wash skin thoroughly after handling.

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

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

Response:

P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/

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shower.

P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor.

P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/ doctor.

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

P363 Wash contaminated clothing before reuse.

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 : 1-Decanethiol
Normal Decyl Mercaptan
NDM

Molecular formula : C₁₀H₂₂S

Component	CAS-No.	Weight %
n-Decyl Mercaptan	143-10-2	95 - 100

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

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,

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- 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.

SECTION 5: Firefighting measures

- Flash point : 96°C (205°F)
Method: closed cup
- Autoignition temperature : 210°C (410°F)
estimated
- 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 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.
- Hazardous decomposition products : Carbon oxides. Sulfur 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**

SDS Number:100000014026

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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. 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 : 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 : Chemical intermediate

SECTION 8: Exposure controls/personal protection**Ingredients with workplace control parameters****US**

Components	Basis	Value	Control parameters	Note
n-Decyl Mercaptan	NIOSH REL	C	0.5 ppm, 3.6 mg/m ³	

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. Use a positive pressure, air-supplying respirator 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

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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.

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. Remove and wash contaminated clothing before re-use. Skin should be washed after contact. Complete head face and neck protection. Rubber apron. 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.

In case of an accident during maintenance/cleaning, this substance must be handled under Strictly Controlled Conditions (SCC) in accordance with REACH regulation Article 18(4) for transported isolated intermediates.

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

Form : liquid
 Physical state : liquid
 Color : Colorless
 Odor : Pungent

Safety data

Flash point : 96°C (205°F)
 Method: closed cup

Lower explosion limit : 0.6 %(V)

Upper explosion limit : 5.6 %(V)

Oxidizing properties : no

Autoignition temperature : 210°C (410°F)
 estimated

Molecular formula : C₁₀H₂₂S

Molecular weight : 174.38 g/mol

pH : Not applicable

Freezing point : No data available

Pour point : No data available

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Boiling point/boiling range	: 237°C (459°F)
Vapor pressure	: 0.13 MMHG at 37.8°C (100.0°F) estimated
Relative density	: 0.85 at 15.6 °C (60.1 °F)
Water solubility	: negligible
Partition coefficient: n-octanol/water	: No data available
Solubility in other solvents	: Medium: Hydrocarbons soluble
Viscosity, kinematic	: 1.46 cSt at 40°C (104°F) No data available
Relative vapor density	: 1 (Air = 1.0)
Evaporation rate	: No data available

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.
Conditions to avoid	: No data available.
Hazardous decomposition products	: Carbon oxides Sulfur oxides
Other data	: No decomposition if stored and applied as directed.

SECTION 11: Toxicological information

Acute oral toxicity	
n-Decyl Mercaptan	: LD50: 2,300 mg/kg Species: Rat

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Acute inhalation toxicity

n-Decyl Mercaptan : : >3.10milligram per literExposure time: 4.5 h
 Species: Rat
 Sex: male and female
 Test atmosphere: vapor
 Method: OECD Test Guideline 403
 Information given is based on data obtained from similar substances.

Acute dermal toxicity

n-Decyl Mercaptan : LD50: > 2,000 mg/kg
 Species: Rabbit

Skin irritation

n-Decyl Mercaptan : Corrosive after 1 to 4 hours of exposure
 Information given is based on data obtained from similar substances.

Eye irritation

n-Decyl Mercaptan : Irreversible effects on the eye
 Information given is based on data obtained from similar substances.

Sensitization

n-Decyl Mercaptan : The product is a skin sensitizer, sub-category 1A.
 Information given is based on data obtained from similar substances.

Repeated dose toxicity

n-Decyl 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
 Information given is based on data obtained from similar substances.

Species: Dog
 Application Route: Inhalation
 Dose: 0, 0.44, 1.6, 7.3 ppm
 Exposure time: 4 wk
 NOEL: 1.7 ppm
 Lowest observable effect level: 0.06 mg/l 7.3 ppm
 Information given is based on data obtained from similar substances.

Genotoxicity in vitro

n-Decyl Mercaptan : Test Type: Ames test
 Result: negative
 Remarks: Information given is based on data obtained from

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similar substances.

Test Type: Sister chromatid exchange

Result: negative

Remarks: Information given is based on data obtained from similar substances.

Test Type: Mouse lymphoma assay

Result: negative

Remarks: Information given is based on data obtained from similar substances.

Genotoxicity in vivo

n-Decyl Mercaptan : Test Type: Mouse micronucleus assay
 Species: Mouse
 Dose: 1250, 2500, 5000 mg/kg
 Remarks: Information given is based on data obtained from similar substances.

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 Aspiration toxicity** : 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-Decyl Mercaptan : LC50: > 100 mg/l
 Exposure time: 96 h
 Species: Oncorhynchus kisutch (Marine, fresh water)
 Information given is based on data obtained from similar substances.

Toxicity to daphnia and other aquatic invertebrates

n-Decyl Mercaptan : EC50: 1 - 10 mg/l
 Exposure time: 48 h
 Species: Daphnia magna (Water flea)
 Method: OECD Test Guideline 202
 Information given is based on data obtained from similar substances.

Toxicity to algae

n-Decyl Mercaptan : EC50: 0.0145 mg/l
 Exposure time: 72 h
 Species: Pseudokirchneriella subcapitata (green algae)
 Growth inhibition Method: OECD Test Guideline 201
 Information given is based on data obtained from similar substances.

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M-Factor

decane-1-thiol : M-Factor (Acute Aquat. Tox.) 10
 M-Factor (Chron. Aquat. Tox.) 10

Biodegradability

n-Decyl Mercaptan : This material is not expected to be readily biodegradable. Information given is based on data obtained from similar substances.

Bioaccumulation

n-Decyl Mercaptan : This material is not expected to bioaccumulate. Information given is based on data obtained from similar substances.

Mobility

n-Decyl Mercaptan : No data available

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

Ecotoxicology Assessment**Short-term (acute) aquatic hazard**

n-Decyl Mercaptan : Very toxic to aquatic life.

Long-term (chronic) aquatic hazard

n-Decyl Mercaptan : 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.

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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)

UN1760, CORROSIVE LIQUIDS, N.O.S., (N-DECYL MERCAPTAN), 8, III

IMO / IMDG (INTERNATIONAL MARITIME DANGEROUS GOODS)

UN1760, CORROSIVE LIQUID, N.O.S., (N-DECYL MERCAPTAN), 8, III, (96 °C c.c.), MARINE POLLUTANT, (N-DECYL MERCAPTAN)

IATA (INTERNATIONAL AIR TRANSPORT ASSOCIATION)

UN1760, CORROSIVE LIQUID, N.O.S., (N-DECYL MERCAPTAN), 8, III

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

UN1760, CORROSIVE LIQUID, N.O.S., (N-DECYL MERCAPTAN), 8, III, (E), ENVIRONMENTALLY HAZARDOUS, (N-DECYL MERCAPTAN)

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

80, UN1760, CORROSIVE LIQUID, N.O.S., (N-DECYL MERCAPTAN), 8, III, ENVIRONMENTALLY HAZARDOUS, (N-DECYL MERCAPTAN)

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

UN1760, CORROSIVE LIQUID, N.O.S., (N-DECYL MERCAPTAN), 8, III, ENVIRONMENTALLY HAZARDOUS, (N-DECYL MERCAPTAN)

Maritime transport in bulk according to IMO instruments

SECTION 15: Regulatory information**National legislation**

SARA 311/312 Hazards : Skin corrosion or irritation
 Serious eye damage or eye irritation
 Respiratory or skin sensitization

CERCLA Reportable : This material does not contain any components with a CERCLA

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Quantity	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 SOCM I Intermediate or Final VOC's (40 CFR 60.489).

US State Regulations

Pennsylvania Right To Know : n-Decyl Mercaptan - 143-10-2
sec-Decylmercaptan - 13402-60-3

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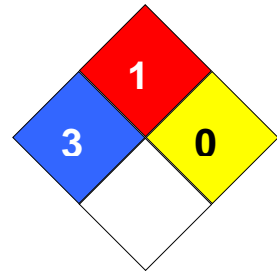
California Prop. 65 Components : This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.

Notification status

Europe REACH : Not in compliance with the inventory
 Switzerland CH INV : On the inventory, or in compliance with the inventory
 United States of America (USA) TSCA : On or in compliance with the active portion of the TSCA inventory
 Canada NDSL : This product contains one or several components that are not on the Canadian DSL nor NDSL.
 Other AIC : Not in compliance with the inventory
 New Zealand NZIoC : Not in compliance with the inventory
 Japan ENCS : On the inventory, or in compliance with the inventory
 Korea KECI : Not in compliance with the inventory
 Philippines PICCS : On the inventory, or in compliance with the inventory
 Taiwan TCSI : Not in compliance with the inventory
 China IECSC : Not in compliance with the inventory

SECTION 16: Other information

NFPA Classification : Health Hazard: 3
 Fire Hazard: 1
 Reactivity Hazard: 0

**Further information**

Legacy SDS Number : 74650

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	NIOSH	National Institute for Occupational

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	Substances List		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%		