

N-Octyl Mercaptan

Version 1.24

Revision Date 2021-09-27

according to GB/T 16483 and GB/T 17519

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

Product information

Product Name : N-Octyl Mercaptan
 Material : 1115893, 1086427, 1092079, 1089361, 1086426, 1021507,
 1021501, 1021505, 1021503, 1021502, 1021508, 1021506,
 1021504, 1024813, 1026777, 1036311, 1021509, 1035162,
 1024812, 1033723

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

Local : Chevron Phillips Chemicals (Shanghai) Corporation
 Room 1810-1812, Shanghai Mart,
 2299 Yan An Road (W),
 Shanghai, PRC 200336
 Tel: (86-21) 22157200

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

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

Emergency Overview**Warning**

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

Hazards : Combustible liquid. May be harmful if swallowed. Causes serious eye irritation. May cause an allergic skin reaction. May cause damage to organs. May cause drowsiness or dizziness. May cause damage to organs through prolonged and repeated exposure. May be harmful if swallowed and enters airways. Very toxic to aquatic life. Very toxic to aquatic life with long lasting effects.

Classification

: Flammable liquids, Category 4
 Acute toxicity, Category 5, Oral
 Serious eye damage/eye irritation, Category 2A
 Skin sensitization, Category 1
 Specific target organ toxicity - single exposure, Category 2
 Specific target organ toxicity - single exposure, Category 3, Narcotic effects
 Specific target organ toxicity - repeated exposure, Category 2
 Aspiration hazard, Category 2
 Short-term (acute) aquatic hazard, Category 1
 Long-term (chronic) aquatic hazard, Category 1

Labeling

Symbol(s)



Signal Word

: Warning

Hazard Statements

: H227: Combustible liquid.
 H303: May be harmful if swallowed.
 H305: May be harmful if swallowed and enters airways.
 H317: May cause an allergic skin reaction.
 H319: Causes serious eye irritation.
 H336: May cause drowsiness or dizziness.
 H371: May cause damage to organs.
 H373: May cause damage to organs through prolonged or repeated exposure.
 H410: Very toxic to aquatic life with long lasting effects.

Precautionary Statements

: **Prevention:**
 P210: Keep away from heat/ sparks/ open flames/ hot surfaces. No smoking.
 P260: Do not breathe dust/ fume/ gas/ mist/ vapors/ spray.
 P264: Wash skin thoroughly after handling.
 P270: Do not eat, drink or smoke when using this product.
 P271: Use only outdoors or in a well-ventilated area.
 P272: Contaminated work clothing should not be allowed out of the workplace.

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P273: Avoid release to the environment.
 P280: Wear protective gloves/ eye protection/ face protection.
Response:
 P301 + P310: IF SWALLOWED: Immediately call a POISON CENTER/ doctor.
 P302 + P352: IF ON SKIN: Wash with plenty of water.
 P304 + P340 + P312: IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor if you feel unwell.
 P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 P308 + P311: IF exposed or concerned: Call a POISON CENTER/ doctor.
 P331: Do NOT induce vomiting.
 P333 + P313: If skin irritation or rash occurs: Get medical advice/ attention.
 P337 + P313: If eye irritation persists: Get medical advice/ attention.
 P362 + P364: Take off contaminated clothing and wash it before reuse.
 P370 + P378: In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.
 P391: Collect spillage.
Storage:
 P403 + P233: Store in a well-ventilated place. Keep container tightly closed.
 P403 + P235: Store in a well-ventilated place. Keep cool.
 P405: Store locked up.
Disposal:
 P501: Dispose of contents/ container to an approved waste disposal plant.

SECTION 3: Composition/information on ingredients

Synonyms : 1-Octanethiol
 normal-Octyl mercaptan
 NOM
 NC8SH

Molecular formula : C₈H₁₈S

Chemical name	CAS-No. / EINECS-No.	Concentration [wt%]
n-Octyl Mercaptan	111-88-6	98.5 - 100

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

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- advice. If symptoms persist, call a physician.
- In case of skin contact : 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 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 : 69-71°C (156-160°F) at 101.325 kPa
Method: EU Method A.9
- Autoignition temperature : No data available
- Suitable extinguishing media : Carbon dioxide (CO₂).
- Unsuitable extinguishing media : High volume water jet.
- Specific hazards during fire fighting : Do not allow run-off from fire fighting to enter drains or water courses.
- Special protective equipment for fire-fighters : Wear self-contained breathing apparatus for 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. For safety reasons in case of fire, cans should be stored separately in closed containments. Use a water spray to cool fully closed containers.
- Fire and explosion protection : Do not spray on a naked flame or any incandescent material. Keep away from open flames, hot surfaces and sources of ignition.
- 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.

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Methods for cleaning up : Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). Keep in suitable, closed containers for disposal.

SECTION 7: Handling and storage**Handling**

Advice on safe handling : Avoid formation of aerosol. Do not breathe vapors/dust. Avoid exposure - obtain special instructions before use. Avoid contact with skin and eyes. For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area. Provide sufficient air exchange and/or exhaust in work rooms. Dispose of rinse water in accordance with local and national regulations. Persons susceptible to skin sensitization problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being used.

Advice on protection against fire and explosion : Do not spray on a naked flame or any incandescent material. Keep away from open flames, hot surfaces and sources of ignition.

Storage

Requirements for storage areas and containers : No smoking. Keep in a 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.

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: Air-Purifying Respirator for Organic Vapors. Use a positive pressure, air-supplying respirator if there is

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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 specific work-place. Wear as appropriate: Flame retardant protective clothing. 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
 Odor : Pungent

Safety data

- Flash point : 69-71°C (156-160°F) at 101.325 kPa
 Method: EU Method A.9
- Lower explosion limit : No data available
- Upper explosion limit : No data available
- Oxidizing properties : No
- Autoignition temperature : No data available
- Molecular formula : C₈H₁₈S
- Molecular weight : 146.32 g/mol
- pH : Not applicable
- Pour point : No data available

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Boiling point/boiling range	: 199°C (390°F)
Vapor pressure	: 0.02 PSI at 37.8°C (100.0°F)
Relative density	: 0.85 at 16 °C (61 °F)
Water solubility	: negligible
Partition coefficient: n-octanol/water	: No data available
Viscosity, kinematic	: 1.04 mm ² /s at 40°C (104°F)
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. Further information: No decomposition if stored and applied as directed. Hazardous reactions: Vapors may form explosive mixture with air.
Conditions to avoid	: Heat, flames and sparks.
Materials to avoid	: May react with oxygen and strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.
Hazardous decomposition products	: Carbon oxides Sulfur oxides
Other data	: No decomposition if stored and applied as directed.

SECTION 11: Toxicological information

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Acute oral toxicity

n-Octyl Mercaptan : LD50: 2,436 mg/kg
Species: Rat
Sex: male and female
Method: Fixed Dose Method

Acute inhalation toxicity

n-Octyl Mercaptan : LC50: > 0.24 mg/l
Exposure time: 4 h
Species: Rat
Sex: male and female
Test atmosphere: vapor
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.

Acute dermal toxicity

n-Octyl Mercaptan : LD50: > 1,680 mg/kg
Species: Rat
Sex: male and female
Method: OECD Test Guideline 402

Skin irritation

n-Octyl Mercaptan : slight irritation. largely based on animal evidence.

Eye irritation

n-Octyl Mercaptan : slight irritation. largely based on animal evidence.

Sensitization

n-Octyl Mercaptan : May cause sensitization by skin contact.
largely based on animal evidence.

Repeated dose toxicity

n-Octyl Mercaptan : Species: Rat, males
Sex: males
Application Route: Oral
Dose: 0, 10, 50, 250 mg/kg
Exposure time: 35 D
Number of exposures: once daily
NOEL: 50 mg/kg
Method: OECD Guideline 422

Species: Rat, females
Sex: females
Application Route: Oral
Dose: 0, 10, 50, 250 mg/kg
Number of exposures: once daily
NOEL: 50 mg/kg
Method: OECD Guideline 422

Genotoxicity in vitro

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n-Octyl Mercaptan : Test Type: Reverse mutation assay
Metabolic activation: with and without metabolic activation
Method: Mutagenicity (Escherichia coli - reverse mutation assay)
Result: negative

Test Type: Chromosome aberration test in vitro
Test system: Human lymphocytes
Metabolic activation: with and without metabolic activation
Result: negative

Test Type: Sister chromatid exchange
Metabolic activation: with and without metabolic activation
Result: negative

Genotoxicity in vivo

n-Octyl Mercaptan : Test Type: Micronucleus test
Species: Mouse
Method: Mutagenicity (micronucleus test)
Result: negative

Reproductive toxicity

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

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

Developmental Toxicity

n-Octyl Mercaptan : Species: Rat
Application Route: Oral diet
Dose: 0, 10, 50, 250 mg/kg
Number of exposures: once daily
NOEL Teratogenicity: 250 mg/kg

Aspiration toxicity

n-Octyl Mercaptan : May be harmful if swallowed and enters airways.

CMR effects

n-Octyl Mercaptan : Mutagenicity: Tests on bacterial or mammalian cell cultures

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did not show mutagenic effects.
 Teratogenicity: Animal testing did not show any effects on fetal development.
 Reproductive toxicity: Animal testing did not show any effects on fertility.

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Further information**

: Solvents may degrease the skin.

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

n-Octyl Mercaptan : LC50: 0.326 mg/l
 Exposure time: 96 h
 Species: *Oryzias latipes* (Orange-red killifish)
 semi-static test Analytical monitoring: yes
 Method: OECD Test Guideline 203
 Very toxic to fish.

Toxicity to daphnia and other aquatic invertebrates

n-Octyl Mercaptan : 0.0243 mg/l
 Exposure time: 48 h
 Species: *Daphnia magna* (Water flea)
 Immobilization Analytical monitoring: yes
 Method: OECD Test Guideline 202
 Very toxic to aquatic organisms.

Toxicity to algae

n-Octyl Mercaptan : 0.039 mg/l
 Exposure time: 72 h
 Species: *Pseudokirchneriella subcapitata* (microalgae)
 semi-static test Analytical monitoring: yes
 Method: OECD Test Guideline 201
 Very toxic to algae.

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)

n-Octyl Mercaptan : > 0.00467 mg/l
 Exposure time: 21 d
 Species: *Daphnia magna* (Water flea)
 Toxic effects on fish and plankton

Biodegradability

n-Octyl Mercaptan : Result: Not readily biodegradable.
 0 %
 Testing period: 28 Days
 Method: OECD Test Guideline 301
 Information given is based on data obtained from similar

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substances.

Bioaccumulation

n-Octyl Mercaptan : Bioconcentration factor (BCF): 11.83
Method: QSAR modeled data

Mobility

n-Octyl Mercaptan : Medium: Soil
Method: Calculation, Mackay Level III Fugacity Model
Content: 47.8 %
This product may float or sink in water.

: Medium: Water
Method: Calculation, Mackay Level III Fugacity Model
Content: 25 %
This product may float or sink in water.

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

Ecotoxicology Assessment

Short-term (acute) aquatic hazard
n-Octyl Mercaptan : Very toxic to aquatic life.

Long-term (chronic) aquatic hazard
n-Octyl 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. Do not burn, or use a cutting torch on, the empty drum.

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

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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)

NA1993, COMBUSTIBLE LIQUID, N.O.S., (N-OCTYL MERCAPTAN), III

IMO / IMDG (INTERNATIONAL MARITIME DANGEROUS GOODS)

UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S., (N-OCTYL MERCAPTAN), 9, III, (69-71°C), MARINE POLLUTANT, (N-OCTYL MERCAPTAN)

IATA (INTERNATIONAL AIR TRANSPORT ASSOCIATION)

UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S., (N-OCTYL MERCAPTAN), 9, III

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

UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S., (N-OCTYL MERCAPTAN), 9, III, (-)

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

UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S., (N-OCTYL MERCAPTAN), 9, III

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

UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S., (N-OCTYL MERCAPTAN), 9, III

Other information	:	n-Octyl Mercaptan, S.T. 1, Cat. X
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Maritime transport in bulk according to IMO instruments

SECTION 15: Regulatory information**Notification status**

Europe REACH	:	On the inventory, or 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 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

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Japan ENCS	:	On the inventory, or in compliance with the inventory
Korea KECI	:	All substances in this product were registered, notified to be registered, or exempted from registration by CPChem through an Only Representative according to K-REACH regulations. Importation of this product is permitted if the Korean Importer of Record was included on CPChem's notifications or if the Importer of Record themselves notified the substances.
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**Further information**

Legacy SDS Number : 76100

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 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

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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%		