

# • SAFETY DATA SHEET

Version 8.10  
Revision Date 08/29/2025  
Print Date 08/30/2025

## SECTION 1. IDENTIFICATION

### 1.1 Product identifiers

Product name : Ethyl chloroacetate

Product Number : E16856  
Brand : Aldrich  
Index-No. : 607-070-00-7  
CAS-No. : 105-39-5

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Synthesis of substances

Uses advised against : The product is being supplied under the TSCA R&D Exemption (40 CFR Section 720.36). It is the recipient's responsibility to comply with the requirements of the R&D exemption. The product may not be used for a non-exempt commercial purpose under TSCA unless appropriate consent is granted in writing by MilliporeSigma.

### 1.3 Details of the supplier of the safety data sheet

Company : Sigma-Aldrich Inc.  
3050 SPRUCE ST  
ST. LOUIS MO 63103  
UNITED STATES

Telephone : +1 314 771-5765  
Fax : +1 800 325-5052

### 1.4 Emergency telephone number

Emergency Phone # : 800-424-9300 CHEMTREC (USA) +1-703-527-3887 CHEMTREC (International) 24 Hours/day; 7 Days/week

## SECTION 2. HAZARDS IDENTIFICATION

**GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)**

**Hazards for the product as supplied**

Flammable liquids : Category 3

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|                                   |              |
|-----------------------------------|--------------|
| Acute toxicity (Oral)             | : Category 3 |
| Acute toxicity (Inhalation)       | : Category 3 |
| Acute toxicity (Dermal)           | : Category 2 |
| Skin irritation                   | : Category 2 |
| Serious eye damage                | : Category 1 |
| Skin sensitisation                | : Category 1 |
| Short-term (acute) aquatic hazard | : Category 1 |

#### Other hazards

None known.

#### GHS label elements

Hazard pictograms :



Signal Word : Danger

Hazard Statements : H226 Flammable liquid and vapour.  
H301 + H331 Toxic if swallowed or if inhaled.  
H310 Fatal in contact with skin.  
H315 Causes skin irritation.  
H317 May cause an allergic skin reaction.  
H318 Causes serious eye damage.  
H400 Very toxic to aquatic life.

Supplemental Hazard Statements : Corrosive to the respiratory tract.

Precautionary statements : **Prevention:**  
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
P233 Keep container tightly closed.  
P240 Ground and bond container and receiving equipment.  
P241 Use explosion-proof electrical/ ventilating/ lighting equipment.  
P242 Use non-sparking tools.  
P243 Take action to prevent static discharges.  
P261 Avoid breathing mist or vapours.  
P262 Do not get in eyes, on skin, or on clothing.

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 must not be allowed out of the workplace.  
P273 Avoid release to the environment.  
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

**Response:**

P301 + P310 + P330 IF SWALLOWED: Immediately call a POISON CENTER/ doctor. Rinse mouth.

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

P304 + P340 + P311 IF INHALED: Remove person to fresh air and keep comfortable for breathing. 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.

P361 + P364 Take off immediately all 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.

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**SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**

Substance / Mixture : Substance

**Components**

| Chemical name       | CAS No./Unique ID | Concentration (% w/w) | Trade secret |
|---------------------|-------------------|-----------------------|--------------|
| ethyl chloroacetate | 105-39-5*         | >= 80 - <= 100        | TSC          |

\* Indicates that the identifier is a CAS No.

TSC- the actual concentration or concentration range is withheld as a trade secret

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## SECTION 4. FIRST AID MEASURES

|   |   |
|---|---|
| General advice  | : First aiders need to protect themselves.<br>Show this safety data sheet to the doctor in attendance.  |
| If inhaled  | : After inhalation: fresh air. Immediately call in physician.<br>If breathing stops: immediately apply artificial respiration, if necessary also oxygen.  |
| In case of skin contact                                     | : In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower.<br>Call a physician immediately.  |
| In case of eye contact                                      | : After eye contact: rinse out with plenty of water.<br>Immediately call in ophthalmologist.<br>Remove contact lenses.  |
| If swallowed  | : If swallowed: give water to drink (two glasses at most). Seek medical advice immediately. In exceptional cases only, if medical care is not available within one hour, induce vomiting (only in persons who are wide awake and fully conscious), administer activated charcoal (20 - 40 g in a 10% slurry) and consult a doctor as quickly as possible. |
| Most important symptoms and effects, both acute and delayed | : The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11   |
| Protection of first-aiders                                  | : For personal protection see section 8.  |
| Notes to physician  | : No data available   |

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## SECTION 5. FIREFIGHTING MEASURES

|                                       |   |
|---------------------------------------|---|
| Suitable extinguishing media          | : Carbon dioxide (CO <sub>2</sub> )<br>Dry powder |
| Unsuitable extinguishing media        | : Foam<br>Water                                   |
| Specific hazards during fire fighting | : Combustible.                                    |

Vapours are heavier than air and may spread along floors.

Forms explosive mixtures with air at elevated temperatures.

Development of hazardous combustion gases or vapours possible in the event of fire.

|  |  |
|--|--|
| Hazardous combustion products                  | : Carbon oxides<br><br>Hydrogen chloride gas   |
| Specific extinguishing methods                 | : No data available  |
| Further information                            | : Remove container from danger zone and cool with water.<br>Suppress (knock down) gases/vapours/mists with a water spray jet.<br>Prevent fire extinguishing water from contaminating surface water or the ground water system. |
| Special protective equipment for fire-fighters | : Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.  |

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## SECTION 6. ACCIDENTAL RELEASE MEASURES

|   |  |
|---|--|
| Personal precautions, protective equipment and emergency procedures | : Advice for non-emergency personnel:<br>Do not breathe vapours, aerosols.<br>Avoid substance contact.<br>Ensure adequate ventilation.<br>Keep away from heat and sources of ignition.<br>Evacuate the danger area, observe emergency procedures, consult an expert.<br>Advice for emergency responders:<br>For personal protection see section 8. |
| Environmental precautions   | : Do not let product enter drains.<br>Risk of explosion.   |
| Methods and materials   | : Cover drains. Collect, bind, and pump off spills.  |

for containment and cleaning up

Observe possible material restrictions (see sections 7 and 10).  
Take up carefully with liquid-absorbent material (e.g. Chemizorb®). Dispose of properly. Clean up affected area.

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## SECTION 7. HANDLING AND STORAGE

For precautions see section 2.2.

|   |   |
|---|---|
| Advice on protection against fire and explosion | : Keep away from open flames, hot surfaces and sources of ignition.<br>Take precautionary measures against static discharge.  |
| Advice on safe handling                         | : Work under hood. Do not inhale substance/mixture.<br>Avoid generation of vapours/aerosols.  |
| Further information on storage conditions       | : Keep container tightly closed in a dry and well-ventilated place.<br>Keep away from heat and sources of ignition.<br>Keep locked up or in an area accessible only to qualified or authorised persons. |
| Storage class                                   | : 3, Flammable liquids  |
| Recommended storage temperature                 | : Recommended storage temperature see product label.  |

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## SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Ingredients with workplace control parameters

Contains no substances with occupational exposure limit values.

**Engineering measures** : No data available

### Personal protective equipment

Respiratory protection : required when vapours/aerosols are generated.  
Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system.

Recommended Filter type: : Filter A (acc. to DIN 3181) for vapours of organic compounds

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be

properly documented.

Hand protection

Material : butyl-rubber  
Break through time : 480 min  
Glove thickness : 0.7 mm  
Protective index : Full contact  
Manufacturer : Butoject® (KCL 898)

Material : Nitrile rubber  
Break through time : 30 min  
Glove thickness : 0.4 mm  
Protective index : Splash contact  
Manufacturer : Camatril® (KCL 730 / Aldrich Z677442, Size M)

Remarks : This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN 16523-1 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: [www.kcl.de](http://www.kcl.de)).

Eye protection : Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).  
Tightly fitting safety goggles

Skin and body protection : Flame retardant antistatic protective clothing.

Hygiene measures : Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

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## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : liquid

Color : colourless

Odor : No data available

Odor Threshold : No data available  
pH : No data available

Melting point/ range : -15 °F / -26 °C  
Method: lit.

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|   |  |
|---|--|
| Boiling point/boiling range                         | : 289 °F / 143 °C<br>Method: lit.  |
| Flash point   | : 129 °F / 54 °C<br>Method: closed cup   |
| Evaporation rate                                    | : No data available  |
| Flammability (solid, gas)                           | : No data available  |
| Flammability (liquids)                              | : No data available  |
| Burning rate  | : No data available  |
| Upper explosion limit /<br>Upper flammability limit | : No data available  |
| Lower explosion limit /<br>Lower flammability limit | : Lower explosion limit<br>2.6 %(V)  |
| Vapor pressure                                      | : 13 hPa (100 °F / 38 °C)  |
| Relative vapour density                             | : No data available  |
| Relative density                                    | : No data available  |
| Density   | : 1.145 g/cm <sup>3</sup> (77 °F / 25 °C)<br>Method: lit.                          |
| Solubility(ies)<br>Water solubility                 | : 20 g/l (67.6 °F / 19.8 °C)   |
| Partition coefficient: n-<br>octanol/water          | : No data available  |
| Autoignition temperature                            | : 833 °F / 445 °C<br>Method: Regulation (EC) No. 440/2008, Annex, A.15<br>GLP: yes |
| Decomposition<br>temperature                        | : No data available  |
| Viscosity, dynamic                                  | : No data available  |
| Viscosity, kinematic                                | : No data available  |
| Flow time   | : No data available  |
| Explosive properties                                | : No data available  |

|                          |                          |
|--------------------------|--------------------------|
| Oxidizing properties     | : No data available      |
| Surface tension          | : 0.038, -15 °F / -26 °C |
| Molecular weight         | : 122.55 g/mol           |
| Particle characteristics |                          |
| Particle size            | : No data available      |

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## SECTION 10. STABILITY AND REACTIVITY

|                                    |  |
|------------------------------------|--|
| Reactivity                         | : Vapour/air-mixtures are explosive at intense warming.  |
| Chemical stability                 | : The product is chemically stable under standard ambient conditions (room temperature) .  |
| Possibility of hazardous reactions | : Violent reactions possible with:<br>Risk of ignition or formation of inflammable gases or vapours with:<br>bases<br>Alkali metals<br>Alkaline earth metals<br>Cyanides<br>Oxidizing agents<br>Generates dangerous gases or fumes in contact with:<br>Water |
| Conditions to avoid                | : Heating.   |
| Incompatible materials             | : no information available   |
| Hazardous decomposition products   | : In the event of fire: see section 5  |

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## SECTION 11. TOXICOLOGICAL INFORMATION

### 11.1 Information on toxicological effects

#### Acute toxicity

LD50 Oral - Rat - 180 mg/kg

Remarks: (ECHA)

LC50 Inhalation - Rat - 4 h - 3.8 mg/l - vapour

LD50 Dermal - Rat - female - 161 mg/kg

Remarks: (ECHA)

No data available

#### Skin corrosion/irritation

Skin - Rabbit

Result: Skin irritation

(OECD Test Guideline 404)

**Serious eye damage/eye irritation**

Eyes - Rabbit

Result: Severe eye irritation

Remarks: (RTECS)

**Respiratory or skin sensitization**

Maximisation Test - Guinea pig

Result: positive

May cause allergic skin reaction.

(OECD Test Guideline 406)

**Germ cell mutagenicity**

No data available

Test Type: Ames test

Test system: *S. typhimurium*

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 471

Result: negative

**Carcinogenicity**

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

OSHA: No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

**Reproductive toxicity**

No data available

No data available

**Specific target organ toxicity - single exposure**

No data available

**Specific target organ toxicity - repeated exposure**

No data available

**Aspiration hazard**

No data available

**11.2 Additional Information**

RTECS: AF9110000

Cough, Shortness of breath, Headache, Nausea, Vomiting

After absorption:

somnolence

ataxia (impaired locomotor coordination)

Tremors

Further data:

Handle in accordance with good industrial hygiene and safety practice.

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## SECTION 12. ECOLOGICAL INFORMATION

### Ecotoxicity

#### Components:

##### **ethyl chloroacetate:**

|   |  |
|---|--|
| Toxicity to fish                                    | : LC50 (Fish): 1.48 mg/l<br>Exposure time: 96 h<br>Remarks: (External MSDS)  |
| Toxicity to daphnia and other aquatic invertebrates | : EC50 (Daphnia magna (Water flea)): 1.6 mg/l<br>End point: Immobilization<br>Exposure time: 48 h<br>Test Type: static test<br>Remarks: (ECHA) |

### Ecotoxicology Assessment

|                          |   |
|--------------------------|---|
| Acute aquatic toxicity   | : Very toxic to aquatic life.                         |
| Chronic aquatic toxicity | : This product has no known ecotoxicological effects. |

### Persistence and degradability

#### Components:

##### **ethyl chloroacetate:**

|                  |   |
|------------------|---|
| Biodegradability | : aerobic<br>Inoculum: activated sludge, non-adapted<br>Result: Readily biodegradable.<br>Biodegradation: 75 %<br>Exposure time: 28 d<br>Method: OECD Test Guideline 301F<br>GLP: yes |
|------------------|---|

### Bioaccumulative potential

No data available

### Mobility in soil

No data available

### Other adverse effects

#### Product:

|                           |   |
|---------------------------|---|
| Ozone-Depletion Potential | : Regulation: 40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances<br>Remarks: 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).

### **Components:**

#### **ethyl chloroacetate:**

Additional ecological information : Discharge into the environment must be avoided.

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## **SECTION 13. DISPOSAL CONSIDERATIONS**

### **Disposal methods**

Waste from residues : Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself.

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## **SECTION 14. TRANSPORT INFORMATION**

### **International Regulations**

#### **IATA-DGR**

UN/ID No. : UN 1181  
Proper shipping name : Ethyl chloroacetate  
Class : 6.1  
Subsidiary risk : 3  
Packing group : II  
Labels : Division 6.1 - Toxic substances, Class 3 - Flammable liquids  
Packing instruction (cargo aircraft) : 662  
Packing instruction (passenger aircraft) : 654

#### **IMDG-Code**

UN number : UN 1181  
Proper shipping name : ETHYL CHLOROACETATE  
  
Class : 6.1  
Subsidiary risk : 3  
Packing group : II  
Labels : 6.1 (3)  
EmS Code : F-E, S-D  
Marine pollutant : yes

### **Transport in bulk according to IMO instruments**

Not applicable for product as supplied.

### **National Regulations**

**49 CFR Road**

UN/ID/NA number : UN 1181  
Proper shipping name : Ethyl chloroacetate

Class : 6.1  
Subsidiary risk : 3  
Packing group : II  
Labels : Division 6.1 - Toxic substances, Class 3 - Flammable liquids  
ERG Code : 155  
Marine pollutant : no

Poison Inhalation Hazard : No

**Special precautions for user**

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

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**SECTION 15. REGULATORY INFORMATION****CERCLA Reportable Quantity**

This material does not contain any components with a CERCLA RQ.

**SARA 304 Extremely Hazardous Substances Reportable Quantity**

This material does not contain any components with a section 304 EHS RQ.

**SARA 302 Extremely Hazardous Substances Threshold Planning Quantity**

This material does not contain any components with a section 302 EHS TPQ.

**SARA 311/312 Hazards** : Fire Hazard  
Acute Health Hazard

**SARA 313** : 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**

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).

The following chemical(s) are listed under the U.S. Clean Air Act Section 111 SOCM I Intermediate or Final VOC's (40 CFR 60.489):

ethyl chloroacetate      105-39-5      >= 90 - <= 100 %

## Clean Water Act

This product does not contain any Hazardous Substances listed under the U.S. CleanWater Act, Section 311, Table 116.4A.

This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.

This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307

This product does not contain any priority pollutants related to the U.S. Clean Water Act

## US State Regulations

### Massachusetts Right To Know

ethyl chloroacetate 105-39-5

### Pennsylvania Right To Know

ethyl chloroacetate 105-39-5

### Maine Chemicals of High Concern

Product does not contain any listed chemicals

### Vermont Chemicals of High Concern

Product does not contain any listed chemicals

### Washington Chemicals of High Concern

Product does not contain any listed chemicals

## The components of this product are reported in the following inventories:

TSCA : All substances listed as active on the TSCA inventory

## TSCA list

No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

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## SECTION 16. OTHER INFORMATION

### Full text of other abbreviations

AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonised System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing

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Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organisation; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardisation; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organisation for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

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