

## SAFETY DATA SHEET

Version 6.20  
Revision Date 06/24/2025  
Print Date 06/25/2025

## SECTION 1. IDENTIFICATION

## 1.1 Product identifiers

Product name : Diisopropyl azodicarboxylate

Product Number : 225541  
Brand : Aldrich  
CAS-No. : 2446-83-5

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

Identified uses : Laboratory chemicals, Synthesis of substances

Uses advised against : After February 3, 2025, this chemical substance (as defined in TSCA section 3(2))/product cannot be distributed in commerce to retailers. After January 28, 2026, this chemical substance (as defined in TSCA section 3(2))/product is and can only be distributed in commerce or processed with a concentration of methylene chloride equal to or greater than 0.1% by weight for the following purposes: (1) Processing as a reactant; (2) Processing for incorporation into a formulation, mixture, or reaction product; (3) Processing for repackaging; (4) Processing for recycling; (5) Industrial or commercial use as a laboratory chemical; (6) Industrial or commercial use as a bonding agent for solvent welding; (7) Industrial and commercial use as a paint and coating remover from safety critical, corrosion-sensitive components of aircraft and spacecraft; (8) Industrial and commercial use as a processing aid; (9) Industrial and commercial use for plastic and rubber products manufacturing; (10) Industrial and commercial use as a solvent that becomes part of a formulation or mixture, where that formulation or mixture will be used inside a manufacturing process, and the solvent (methylene chloride) will be reclaimed; (11) Industrial and commercial use in the refinishing for wooden furniture, decorative pieces, and architectural fixtures of artistic, cultural or historic value until May 8, 2029; (12) Industrial and commercial use in adhesives and sealants in aircraft, space vehicle, and turbine applications for structural and safety critical non-structural applications until May 8, 2029; (13) Disposal; and (14) Export.

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

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## SECTION 2. HAZARDS IDENTIFICATION

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

Skin irritation : Category 2

Eye irritation : Category 2A

Carcinogenicity : Category 2

Specific target organ toxicity - single exposure : Category 3 (Respiratory system)

Specific target organ toxicity - repeated exposure : Category 2

Short-term (acute) aquatic hazard : Category 2

Long-term (chronic) aquatic hazard : Category 2

### Other hazards

None known.

### GHS label elements

Hazard pictograms :



Signal Word	: Warning
Hazard Statements	: H315 Causes skin irritation. H319 Causes serious eye irritation. H335 May cause respiratory irritation. H351 Suspected of causing cancer. H373 May cause damage to organs through prolonged or repeated exposure. H411 Toxic to aquatic life with long lasting effects.
Precautionary statements	: <b>Prevention:</b> P201 Obtain special instructions before use. P202 Do not handle until all safety precautions have been read and understood. P260 Do not breathe mist or vapours. P264 Wash skin thoroughly after handling. P271 Use only outdoors or in a well-ventilated area. P273 Avoid release to the environment. P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.  <b>Response:</b> P302 + P352 IF ON SKIN: Wash with plenty of soap and 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 + P313 IF exposed or concerned: Get medical advice/ attention. P332 + P313 If skin irritation occurs: Get medical advice/ attention. P337 + P313 If eye irritation persists: Get medical advice/ attention. P362 Take off contaminated clothing and wash before reuse. P391 Collect spillage.  <b>Storage:</b> P403 + P233 Store in a well-ventilated place. Keep container tightly closed. P405 Store locked up.  <b>Disposal:</b> 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
diisopropyl azodicarboxylate	2446-83-5*	$\geq 80 - \leq 100$	TSC
Dichloromethane	75-09-2*	$\geq 1 - \leq 5$	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 : Show this safety data sheet to the doctor in attendance.
- If inhaled : After inhalation: fresh air. Call in physician.
- In case of skin contact : In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower. Consult a physician.
- In case of eye contact : After eye contact: rinse out with plenty of water. Call in ophthalmologist. Remove contact lenses.
- If swallowed : After swallowing: immediately make victim drink water (two glasses at most). Consult a physician.
- 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 : Water  
Foam  
Carbon dioxide (CO<sub>2</sub>)  
Dry powder
- Unsuitable extinguishing media : For this substance/mixture no limitations of extinguishing agents are given.

Specific hazards during fire fighting : Combustible.

Vapours are heavier than air and may spread along floors.

Forms explosive mixtures with air on intense heating.

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

Hazardous combustion products : Carbon oxides

Nitrogen oxides (NO<sub>x</sub>)

Hydrogen chloride gas

Specific extinguishing methods : No data available

Further information : Suppress (knock down) gases/vapours/mists with a water spray jet.  
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:  
Do not breathe vapours, aerosols.  
Avoid substance contact.  
Ensure adequate ventilation.  
Evacuate the danger area, observe emergency procedures, consult an expert.  
Advice for emergency responders:  
For personal protection see section 8.

- Environmental precautions : Do not let product enter drains.
- Methods and materials for containment and cleaning up : Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up with liquid-absorbent material (e.g. Chemisorb® ). Dispose of properly. Clean up affected area.

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## SECTION 7. HANDLING AND STORAGE

For precautions see section 2.2.

- Advice on safe handling : Work under hood. Do not inhale substance/mixture. Avoid generation of vapours/aerosols.
- Further information on storage conditions : Tightly closed.
- Storage class : 10, Combustible liquids
- Recommended storage temperature : 36 - 46 °F / 2 - 8 °C
- Further information on storage stability : Handle and store under inert gas.
- Packaging material : Suitable material: Amber Glass Bottle/Jar

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## SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Ingredients with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Dichloromethane	75-09-2	TWA	50 ppm	ACGIH
		PEL	25 ppm	OSHA CARC
		STEL	125 ppm	OSHA CARC
		ECEL-TWA	2 ppm	TSCA ECEL
		EPA STEL	16 ppm 57 mg/m <sup>3</sup>	TSCA ECEL

### Biological occupational exposure limits

Components	CAS-No.	Control parameter s	Biological specimen	Sampling time	Permissible concentration	Basis
Dichloromethane	75-09-2	Dichloromethane	Urine	End of shift (As soon as possible after exposure ceases)	0.3 mg/l	ACGIH BEI

**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 type ABEK

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 : 10 min  
Glove thickness : 0.7 mm  
Protective index : Splash contact  
Manufacturer : Butoject® (KCL 898)

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). Safety glasses
Skin and body protection	: 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	: clear, liquid
Color	: orange
Odor	: No data available
Odor Threshold	: No data available
pH	: No data available
Melting point	: No data available
Boiling point/boiling range	: 167 °F / 75 °C (0.33 hPa) Method: lit.
Flash point	: 223 °F / 106 °C
Evaporation rate	: No data available
Flammability (solid, gas)	: No data available
Flammability (liquids)	: No data available
Burning rate	: No data available
Upper explosion limit / Upper flammability limit	: No data available
Lower explosion limit / Lower flammability limit	: No data available
Vapor pressure	: No data available
Relative vapour density	: No data available
Relative density	: No data available

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Density	: 1.027 g/mL (77 °F / 25 °C) Method: lit.
Solubility(ies)	
Water solubility	: insoluble
Partition coefficient: n-octanol/water	: No data available
Autoignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity, dynamic	: No data available
Viscosity, kinematic	: No data available
Flow time	: No data available
Explosive properties	: Not classified as explosive.
Oxidizing properties	: none
Molecular weight	: 202.21 g/mol
Particle characteristics	
Particle size	: No data available

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## SECTION 10. STABILITY AND REACTIVITY

Reactivity	: Forms explosive mixtures with air on intense heating.  A range from approx. 15 Kelvin below the flash point is to be rated as critical.
Chemical stability	: The product is chemically stable under standard ambient conditions (room temperature) .
Possibility of hazardous reactions	: Violent reactions possible with: Strong oxidizing agents Bases Alcohols
Conditions to avoid	: Decomposes violently at or above: 100°C  Strong heating.

Incompatible materials : No data available

Hazardous decomposition : In the event of fire: see section 5 products

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## SECTION 11. TOXICOLOGICAL INFORMATION

### 11.1 Information on toxicological effects

#### Acute toxicity

Acute toxicity estimate Oral - > 5,000 mg/kg  
(Calculation method)

Symptoms: Irritations of mucous membranes in the mouth, pharynx, oesophagus and gastrointestinal tract.

LC50 Inhalation - Rat - 8 h - 12,000 mg/l - dust/mist

Remarks: (External MSDS)

Inhalation: Irritating to respiratory system.

Symptoms: mucosal irritations, Cough, Shortness of breath, Possible damages:, damage of respiratory tract

Acute toxicity estimate Dermal - 2,114 mg/kg  
(Calculation method)

LD50 Dermal - Rabbit - 2,150 mg/kg

Remarks: (External MSDS)

#### Skin corrosion/irritation

No data available

#### Serious eye damage/eye irritation

No data available

#### Respiratory or skin sensitization

No data available

#### Germ cell mutagenicity

Test Type: Ames test

Test system: Escherichia coli/Salmonella typhimurium

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 471

Result: negative

#### Carcinogenicity

IARC: 2A - Group 2A: Probably carcinogenic to humans (Dichloromethane)

NTP: RAHC - Reasonably anticipated to be a human carcinogen (Dichloromethane)

OSHA: OSHA specifically regulated carcinogen (Dichloromethane)

#### Reproductive toxicity

No data available

#### Specific target organ toxicity - single exposure

May cause respiratory irritation.

#### Specific target organ toxicity - repeated exposure

May cause damage to organs through prolonged or repeated exposure.

**Aspiration hazard**

No data available

**11.2 Additional Information**

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

The following applies to azo dyes in general: azo dyes containing a carcinogenic aryl amine component are suspected of possessing a carcinogenic potential. It is therefore recommended that the substance be handled as if it possessed the properties of the basic amine.

Other dangerous properties can not be excluded.

Handle in accordance with good industrial hygiene and safety practice.

Stomach - Irregularities - Based on Human Evidence

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**SECTION 12. ECOLOGICAL INFORMATION****Ecotoxicity****Components:****diisopropyl azodicarboxylate:**

Toxicity to fish	:	LC50 (Cyprinus carpio (Carp)): 13.4 mg/l Exposure time: 96 h Remarks: (External MSDS)
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 42 mg/l Exposure time: 48 h Remarks: (External MSDS)
Toxicity to algae/aquatic plants	:	IC50 (Pseudokirchneriella subcapitata (green algae)): 6.8 mg/l Exposure time: 72 h Remarks: (External MSDS)

**Dichloromethane:**

Toxicity to fish	:	LC50 (Pimephales promelas (fathead minnow)): 193.00 mg/l End point: mortality Exposure time: 96 h Test Type: flow-through test Analytical monitoring: yes Remarks: (ECHA)
Toxicity to daphnia and other aquatic	:	LC50 (Daphnia magna (Water flea)): 27 mg/l End point: mortality

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invertebrates	Exposure time: 48 h Test Type: static test Method: US-EPA
Toxicity to fish (Chronic toxicity)	: LC50 (Pimephales promelas (fathead minnow)): 471 mg/l End point: mortality Exposure time: 8 d Test Type: flow-through test Analytical monitoring: yes Remarks: (ECHA)
Toxicity to microorganisms	: EC50 (activated sludge): 2,590 mg/l Exposure time: 40 min Test Type: static test Analytical monitoring: yes Method: OECD Test Guideline 209

## **Persistence and degradability**

### **Components:**

#### **diisopropyl azodicarboxylate:**

Biodegradability : Result: Not readily biodegradable.  
Biodegradation: 15 %  
Exposure time: 28 d  
Method: OECD Test Guideline 301B  
Remarks: (External MSDS)

#### **Dichloromethane:**

Biodegradability : aerobic  
Inoculum: activated sludge, non-adapted  
Concentration: 5 mg/l  
Result: Readily biodegradable.  
Biodegradation: 68 %  
Exposure time: 28 d  
Method: OECD Test Guideline 301D  
GLP: yes

## **Bioaccumulative potential**

### **Components:**

#### **Dichloromethane:**

Bioaccumulation : Species: Cyprinus carpio (Carp)  
Bioconcentration factor (BCF): 2 - 5.4  
Exposure time: 6 Weeks  
Concentration: 250 µg/l  
Method: OECD Test Guideline 305  
GLP: yes

Species: Cyprinus carpio (Carp)

Bioconcentration factor (BCF): 6 - 40  
Exposure time: 6 Weeks  
Concentration: 25 µg/l  
Method: OECD Test Guideline 305  
GLP: yes

Partition coefficient: n-octanol/water : log Pow: 1.25 (68 °F / 20 °C)  
pH: 7  
Method: (experimental)  
Remarks: Bioaccumulation is not expected.

#### **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  
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:**

##### **diisopropyl azodicarboxylate:**

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

##### **Dichloromethane:**

Results of PBT and vPvB assessment : Substance is not persistent, bioaccumulative, and toxic (PBT). Substance is not very persistent and very bioaccumulative (vPvB).  
: Substance does not meet the criteria for PBT or vPvB according to Regulation (EC) No 1907/2006, Annex XIII.

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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 3082  
Proper shipping name : Environmentally hazardous substance, liquid, n.o.s.  
(diisopropyl azodicarboxylate)  
Class : 9  
Packing group : III  
Labels : Class 9 - Miscellaneous dangerous substances and  
articles  
Packing instruction (cargo : 964  
aircraft)  
Packing instruction : 964  
(passenger aircraft)

#### IMDG-Code

UN number : UN 3082  
Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE,  
LIQUID, N.O.S.  
(diisopropyl azodicarboxylate)  
Class : 9  
Packing group : III  
Labels : 9  
EmS Code : F-A, S-F  
Marine pollutant : yes

#### Transport in bulk according to IMO instruments

Not applicable for product as supplied.

### National Regulations

#### 49 CFR Road

Not regulated as a dangerous good

Poison Inhalation Hazard : No

#### Special precautions for user

Remarks : EHS-Mark required (ADR 2.2.9.1.10, IMDG code  
2.10.3) for single packagings and combination  
packagings containing inner packagings with  
Dangerous Goods > 5L for liquids or > 5kg for solids.  
Packages smaller than or equal to 5 kg / L , not  
dangerous goods of Class 9

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.

## SECTION 15. REGULATORY INFORMATION

### CERCLA Reportable Quantity

Listed substances in the product are at low enough levels to not be expected to exceed the 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** : Acute Health Hazard  
Chronic Health Hazard

**SARA 313** : The following components are subject to reporting levels established by SARA Title III, Section 313:

Dichloromethane	75-09-2	>= 1 - < 5 %
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### 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).

The following chemical(s) are listed as HAP under the U.S. Clean Air Act, Section 112 (40 CFR 61):

Dichloromethane	75-09-2	>= 1 - < 5 %
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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 Intermediate or Final VOC's (40 CFR 60.489):

Dichloromethane	75-09-2	>= 1 - < 5 %
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### Clean Water Act

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

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

This product contains the following toxic pollutants listed under the U.S. Clean Water Act Section 307

Dichloromethane	75-09-2	>= 1 - < 5 %
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This product contains the following priority pollutants related to the U.S. Clean Water Act:

Dichloromethane	75-09-2	>= 1 - < 5 %
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### US State Regulations

#### Massachusetts Right To Know

Dichloromethane	75-09-2
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#### Pennsylvania Right To Know

Dichloromethane	75-09-2
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#### Maine Chemicals of High Concern

Product does not contain any listed chemicals

**Vermont Chemicals of High Concern**

Dichloromethane

75-09-2

**Washington Chemicals of High Concern**

Dichloromethane

75-09-2

**California Prop. 65**

WARNING: This product can expose you to chemicals including Dichloromethane, which is/are known to the State of California to cause cancer. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

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

TSCA : Product contains substance(s) not listed on TSCA inventory.

**TSCA list**

No substances are subject to a Significant New Use Rule.

The following substance(s) is/are subject to TSCA 12(b) export notification requirements:  
Dichloromethane 75-09-2

After February 3, 2025, this chemical substance (as defined in TSCA section 3(2))/product cannot be distributed in commerce to retailers. After January 28, 2026, this chemical substance (as defined in TSCA section 3(2))/product is and can only be distributed in commerce or processed with a concentration of methylene chloride equal to or greater than 0.1% by weight for the following purposes: (1) Processing as a reactant; (2) Processing for incorporation into a formulation, mixture, or reaction product; (3) Processing for repackaging; (4) Processing for recycling; (5) Industrial or commercial use as a laboratory chemical; (6) Industrial or commercial use as a bonding agent for solvent welding; (7) Industrial and commercial use as a paint and coating remover from safety critical, corrosion-sensitive components of aircraft and spacecraft; (8) Industrial and commercial use as a processing aid; (9) Industrial and commercial use for plastic and rubber products manufacturing; (10) Industrial and commercial use as a solvent that becomes part of a formulation or mixture, where that formulation or mixture will be used inside a manufacturing process, and the solvent (methylene chloride) will be reclaimed; (11) Industrial and commercial use in the refinishing for wooden furniture, decorative pieces, and architectural fixtures of artistic, cultural or historic value until May 8, 2029; (12) Industrial and commercial use in adhesives and sealants in aircraft, space vehicle, and turbine applications for structural and safety critical non-structural applications until May 8, 2029; (13) Disposal; and (14) Export.

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**SECTION 16. OTHER INFORMATION**

**Full text of other abbreviations**

ACGIH : USA. ACGIH Threshold Limit Values (TLV)  
ACGIH BEI : ACGIH - Biological Exposure Indices (BEI)  
OSHA CARC : OSHA Specifically Regulated Chemicals/Carcinogens  
TSCA ECEL : TSCA Existing Chemical Exposure Limit



ACGIH / TWA : 8-hour, time-weighted average  
 OSHA CARC / PEL : Permissible exposure limit (PEL)  
 OSHA CARC / STEL : Excursion limit  
 TSCA ECEL / ECEL-TWA : Existing Chemical Exposure List (TWA)  
 TSCA ECEL / EPA STEL : EPA STEL

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 Harmonized 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 Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; 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 - Organization 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

The information is believed to be correct but is not exhaustive and will be used solely as a guideline, which is based on current knowledge of the chemical substance or mixture and is applicable to appropriate safety precautions for the product. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See [www.sigma-aldrich.com](http://www.sigma-aldrich.com) and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

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