

# SAFETY DATA SHEETS

According to Globally Harmonized System of Classification and Labelling of Chemicals (GHS) - Sixth revised edition

Version: 1.0

Creation Date: Dec 17, 2021

Revision Date: Dec 17, 2021

## SECTION 1. Identification of the substance

### Product identifiers

Product name: Diisopropyl azeodicarboxylate

CAS-No.: 2446-83-5

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

Identified uses: Laboratory chemicals, Manufacture of substances

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

Company: CHEMLYTE SOLUTIONS CO., LTD

Address: A1-3-830, XiXi Center, No. 588, Wenyi West Road, Hangzhou 310000,  
Zhejiang, China

Telephone: +86-(571)-85061365

Fax : +86-(571)-85060165

### Emergency telephone number

Emergency Phone # : +1-703-527-3887

## SECTION 2. HAZARDS IDENTIFICATION

### Emergency Overview

Appearance : clear, liquid

Color : orange

May be harmful in contact with skin. Causes skin irritation. Causes serious eye irritation. May cause respiratory irritation. Suspected of causing cancer. May cause damage to organs. May cause damage to organs through prolonged or repeated exposure. Toxic to aquatic life with long lasting effects.

### GHS Classification

Acute toxicity (Dermal) : Category 5

Skin corrosion/irritation : Category 2

Serious eye damage/eye irritation : Category 2A

Carcinogenicity : Category 2

Specific target organ toxicity - single exposure : Category 2

Specific target organ toxicity - single exposure : Category 3 (respiratory tract irritation)

Specific target organ toxicity - repeated exposure : Category 2

Short-term (acute) aquatic hazard : Category 2

Long-term (chronic) aquatic hazard : Category 2

**GHS label elements**

Hazard pictograms :



Signal Word : Warning

Hazard Statements :

H313 May be harmful in contact with skin.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H335 May cause respiratory irritation.

H351 Suspected of causing cancer.

H371 May cause damage to organs.

H373 May cause damage to organs through prolonged or repeated exposure.

H411 Toxic to aquatic life with long lasting effects.

Precautionary Statements :

**Prevention:**

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 vapors.

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.

P273 Avoid release to the environment.

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

**Response:**

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.

P332 + P313 If skin irritation occurs: Get medical advice/ attention.

P337 + P313 If eye irritation persists: Get medical advice/ attention.

P391 Collect spillage.

**Storage:**

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.

P405 Store locked up.

**Disposal:**

P501 Dispose of contents/ container to an approved waste disposal plant.

**Reduced Labeling (<= 125 ml)**

Pictogram

Signal Word: Warning

Hazard Statements

H313 May be harmful in contact with skin.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H335 May cause respiratory irritation.

H351 Suspected of causing cancer.

H371 May cause damage to organs.

H373 May cause damage to organs through prolonged or repeated exposure.

H411 Toxic to aquatic life with long lasting effects.

Precautionary Statements none

#### **Physical and chemical hazards**

Not classified based on available information.

#### **Health hazards**

May be harmful in contact with skin. Causes skin irritation. Causes serious eye irritation.

Suspected of causing cancer. May cause damage to organs. May cause respiratory irritation. May cause damage to organs through prolonged or repeated exposure.

#### **Environmental hazards**

Toxic to aquatic life. Toxic to aquatic life with long lasting effects.

#### **Other hazards which do not result in classification**

None known.

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

Substance / Mixture : Substance

#### **Components**

Chemical name	CAS-No.	Concentration (% w/w)
diisopropyl azodicarboxylate	2446-83-5	<= 100
Dichloromethane	75-09-2	>= 1 -< 10

### **SECTION 4. FIRST AID MEASURES**

**General advice :** Show this material 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

### **SECTION 5. FIRE-FIGHTING 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.

Vapors 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 :**

Suppress (knock down) gases/vapors/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.

## SECTION 6. ACCIDENTAL RELEASE MEASURES

**Personal precautions, protective equipment and emergency procedures :**

Advice for non-emergency personnel:

Do not breathe vapors, 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. Chemizorb® ). Dispose of properly. Clean up affected area.

## SECTION 7. HANDLING AND STORAGE

**Handling**

For precautions see section 2.2.

Advice on safe handling : Work under hood. Do not inhale substance/mixture.

Avoid generation of vapours/aerosols.

#### Storage

Further information on storage conditions: Tightly closed.

Storage class : 10, Combustible liquids

Recommended storage temperature : 2 - 8 °C

Further information on storage stability : Handle and store under inert gas.

Packaging material : Suitable material: Amber Glass Bottle/Jar

## 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	PC-TWA	200 mg/m <sup>3</sup>	GBZ 2.1- 2007
Further information: G2A - Probably carcinogenic to humans				
		TWA	50 ppm	ACGIH

#### Biological occupational exposure limits

Components	CAS-No.	Control parameters	Biological specimen	Sampling time	Permissible concentration	Basis
Dichloromethane	75-09-2	dichloromethane	Urine	End of shift	0.3 mg/l	CN BEI
		Dichloromethane	Urine	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.

Eye/face 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

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, D36124 Eichenzell, Internet: [www.kcl.de](http://www.kcl.de)).

Hygiene measures : Immediately change contaminated clothing. Apply preventive skin protection.

Wash hands and face after working with substance.

## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

**Appearance** : clear, liquid

**Color** : orange

**Odor** : No data available

**Odor Threshold** : No data available

**pH** : No data available

**Freezing point** : No data available

**Boiling point/boiling range** : 75 °C (0.33 hPa)

**Method:** lit.

**Flash point** : 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 vapor density** : No data available

**Relative density** : No data available

**Density** : 1.027 g/mL (25 °C)

**Method** : lit.

**Solubility(ies)**

**Water solubility** : insoluble

**Partition coefficient noctanol/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

## 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 products : In the event of fire: see section 5

## SECTION 11. TOXICOLOGICAL INFORMATION

### 11.1 Information on toxicological effects

#### Acute toxicity

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)

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

Acute toxicity estimate Dermal - 2,150 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**

No data available

**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.

## 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 invertebrates :

LC50 (Daphnia magna (Water flea)): 27 mg/l

End point: mortality

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: noctanol/water: log Pow: 1.25 (20 °C)

pH: 7

Method: (experimental)

Remarks: Bioaccumulation is not expected.

#### **Mobility in soil**

No data available

#### **Other adverse effects**

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.

## **SECTION 13. DISPOSAL CONSIDERATIONS**

#### **Disposal methods**

Waste from residues : Offer surplus and non-recyclable solutions to a licensed disposal company.

## **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 aircraft) : 964

Packing instruction (passenger aircraft) : 964

##### **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 Annex II of MARPOL 73/78 and the IBC Code**

Not applicable for product as supplied.

**National regulation**

**GB 6944/12268**

UN number : UN 3082

Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (diisopropyl azodicarboxylate)

Class : 9

Packing group : III

Labels : 9

**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

**National regulatory information**

**Law on the Prevention and Control of Occupational Diseases**

**Regulations on Safety Management of Hazardous Chemicals**

Catalogue of Hazardous Chemicals : applicable

Identification of Major Hazard Installations for Hazardous Chemicals (GB 18218) : Not listed

Hazardous Chemicals for Priority Management under SAWS : Not listed

**Regulations on Occupational Labor Protection in the at workplaces where Toxic Substances Are Used**

Catalogue of Highly Toxic Chemicals : Not listed

**Regulation of Environmental Management on the First Import of Chemicals and the Import and Export of Toxic Chemicals**

China Severely Restricted Toxic Chemicals for Import and Export : Not listed

**Regulation on the Administration of Precursor Chemicals**

Catalogue and Classification of Precursor Chemicals : Not listed

## SECTION 16. Other information

**Further information**



Copyright 2021 Chemlyte Solutions Co., Ltd granted to make unlimited paper copies for internal use only.