

### 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Isophorone diisocyanate  
Product Number : 59192  
Brand : Fluka  
Company : Sigma-Aldrich  
3050 Spruce Street  
SAINT LOUIS MO 63103  
USA  
Telephone : +1 800-325-5832  
Fax : +1 800-325-5052  
Emergency Phone # : (314) 776-6555

### 2. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms : 5-Isocyanato-1-(isocyanatomethyl)-1,3,3-trimethylcyclohexane  
Formula : C<sub>12</sub>H<sub>18</sub>N<sub>2</sub>O<sub>2</sub>  
Molecular Weight : 222.28 g/mol

CAS-No.	EC-No.	Index-No.	Concentration
<b>Isophorone di-isocyanate</b>			
4098-71-9	223-861-6	615-008-00-5	-

### 3. HAZARDS IDENTIFICATION

#### Emergency Overview

##### OSHA Hazards

Highly toxic by inhalation, Respiratory sensitizer, Irritant

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

Lachrymator.

#### HMIS Classification

Health Hazard: 4  
Chronic Health Hazard: \*  
Flammability: 1  
Physical hazards: 0

#### NFPA Rating

Health Hazard: 4  
Fire: 1  
Reactivity Hazard: 0

#### Potential Health Effects

<b>Inhalation</b>	May be fatal if inhaled. Causes respiratory tract irritation.
<b>Skin</b>	May be harmful if absorbed through skin. Causes skin irritation.
<b>Eyes</b>	Causes eye irritation.
<b>Ingestion</b>	May be harmful if swallowed.

#### 4. FIRST AID MEASURES

##### General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

##### If inhaled

If breathed in, move person into fresh air. If not breathing give artificial respiration. Consult a physician.

##### In case of skin contact

Wash off with soap and plenty of water. Consult a physician.

##### In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

##### If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

#### 5. FIRE-FIGHTING MEASURES

##### Flammable properties

Flash point 163 °C (325 °F) - closed cup

Ignition temperature no data available

##### Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

##### Special protective equipment for fire-fighters

Wear self contained breathing apparatus for fire fighting if necessary.

#### 6. ACCIDENTAL RELEASE MEASURES

##### Personal precautions

Wear respiratory protection. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.

##### Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

##### Methods for cleaning up

Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

#### 7. HANDLING AND STORAGE

##### Handling

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist. Normal measures for preventive fire protection.

##### Storage

Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Moisture sensitive.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Components with workplace control parameters

Components	CAS-No.	Value	Control parameters	Update	Basis
Isophorone di-isocyanate	4098-71-9	TWA	0.005 ppm	1994-09-01	US. American Conference of Governmental and Industrial Hygienists Threshold Limit Values for Chemical Substances in the Work Environment; Annual Reports for the Year 2004:Committees on Threshold Limit Values (TLVs ) and Biological Exposure Indices (BEIs)
		TWA	0.01 ppm	1989-03-01	US. Department of Labor - Occupational Safety and Health Administration (OSHA) 29 CFR 1910.1000 Z-1-A
Remarks	Skin contact does contribute to exposure.				
		STEL	0.02 ppm	1989-03-01	US. Department of Labor - Occupational Safety and Health Administration (OSHA) 29 CFR 1910.1000 Z-1-A
	Skin contact does contribute to exposure.				

### Personal protective equipment

#### Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

#### Hand protection

Handle with gloves.

#### Eye protection

Safety glasses

#### Skin and body protection

Choose body protection according to the amount and concentration of the dangerous substance at the work place.

#### Hygiene measures

Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Appearance

Form liquid

### Safety data

pH no data available  
Melting point no data available  
Boiling point 158 - 159 °C (316 - 318 °F) at 20 hPa (15 mmHg)  
Flash point 163 °C (325 °F) - closed cup  
Ignition temperature no data available  
Lower explosion limit no data available  
Upper explosion limit no data available  
Density 1.049 g/mL at 25 °C (77 °F)  
Water solubility no data available

## 10. STABILITY AND REACTIVITY

### Storage stability

Stable under recommended storage conditions.

### Conditions to avoid

Avoid moisture.

### Materials to avoid

Strong oxidizing agents, Strong acids, Alcohols

### Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Carbon oxides, nitrogen oxides (NOx)

## 11. TOXICOLOGICAL INFORMATION

### Acute toxicity

LD50 Oral - rat - 4,825 mg/kg

### Irritation and corrosion

no data available

### Sensitisation

May cause allergic respiratory reaction.

### Chronic exposure

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.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

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 identified as a carcinogen or potential carcinogen by OSHA.

## Signs and Symptoms of Exposure

Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin.,  
Cough, Shortness of breath, Headache, Nausea

## Potential Health Effects

<b>Inhalation</b>	May be fatal if inhaled. Causes respiratory tract irritation.
<b>Skin</b>	May be harmful if absorbed through skin. Causes skin irritation.
<b>Eyes</b>	Causes eye irritation.
<b>Ingestion</b>	May be harmful if swallowed.

## Additional Information

RTECS: NQ9370000

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## 12. ECOLOGICAL INFORMATION

### Elimination information (persistence and degradability)

no data available

### Ecotoxicity effects

no data available

### Further information on ecology

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

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## 13. DISPOSAL CONSIDERATIONS

### Product

Observe all federal, state, and local environmental regulations. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

### Contaminated packaging

Dispose of as unused product.

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## 14. TRANSPORT INFORMATION

### DOT (US)

UN-Number: 2290 Class: 6.1 Packing group: III

Proper shipping name: Isophorone diisocyanate

Marine pollutant: No

Poison Inhalation Hazard: No

### IMDG

UN-Number: 2290 Class: 6.1 Packing group: III EMS-No: F-A, S-A

Proper shipping name: ISOPHORONE DIISOCYANATE

Marine pollutant: No

### IATA

UN-Number: 2290 Class: 6.1 Packing group: III

Proper shipping name: Isophorone diisocyanate

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## 15. REGULATORY INFORMATION

**OSHA Hazards**

Highly toxic by inhalation, Respiratory sensitizer, Irritant

**DSL Status**

All components of this product are on the Canadian DSL list.

**SARA 302 Components**

Isophorone di-isocyanate

CAS-No.  
4098-71-9

Revision Date  
1991-07-01

**SARA 313 Components**

Isophorone di-isocyanate

CAS-No.  
4098-71-9

Revision Date  
1991-07-01

**SARA 311/312 Hazards**

Acute Health Hazard

**Massachusetts Right To Know Components**

Isophorone di-isocyanate

CAS-No.  
4098-71-9

Revision Date  
1991-07-01

**Pennsylvania Right To Know Components**

Isophorone di-isocyanate

CAS-No.  
4098-71-9

Revision Date  
1991-07-01

**New Jersey Right To Know Components**

Isophorone di-isocyanate

CAS-No.  
4098-71-9

Revision Date  
1991-07-01

**California Prop. 65 Components**

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

**16. OTHER INFORMATION****Further information**

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The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Co., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.