

## 5-Norbornene-2,3-dicarboxylic acid 3813-52-3 MSDS

### Section 1 - Chemical Product MSDS Name: Cis-5-Norbornene-Endo-2,3-Dicarboxylic Acid

99% Material Safety Data Sheet

Synonym:

### Section 2 - COMPOSITION, INFORMATION ON INGREDIENTS

CAS#	Chemical Name	content
3813-52-3	Cis-5-Norbornene-Endo-2,3-Dicarboxylic	99%

Hazard Symbols: XN

Risk Phrases: 20/21

### Section 3 - HAZARDS IDENTIFICATION

#### EMERGENCY OVERVIEW

Harmful by inhalation and in contact with skin. The toxicological properties of this material have not been fully investigated.

Potential Health Effects

Eye:

May cause eye irritation.

Skin:

May cause skin irritation.

Ingestion:

May cause irritation of the digestive tract. May cause cardiac disturbances. The toxicological properties of this substance have not been fully investigated. May cause central nervous system depression.

Inhalation:

May cause respiratory tract irritation. The toxicological properties of this substance have not been fully investigated. May cause cardiac abnormalities. Inhalation at high concentrations may cause CNS depression and asphyxiation.

Chronic:

No information found.

### Section 4 - FIRST AID MEASURES

Eyes: Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.

Skin:

Get medical aid. Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse.

Ingestion:

Never give anything by mouth to an unconscious person. Get medical aid. Do NOT induce vomiting. If conscious and alert, rinse mouth and drink 2-4 cupfuls of milk or water.

Inhalation:

Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.

Notes to Physician:

## **Section 5 - FIRE FIGHTING MEASURES**

General Information:

As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Containers may explode when heated. Non-combustible, substance itself does not burn but may decompose upon heating to produce irritating, corrosive and/or toxic fumes. Runoff from fire control or dilution water may cause pollution. Extinguishing Media:

Use water spray to cool fire-exposed containers. Substance is noncombustible; use agent most appropriate to extinguish surrounding fire. Do NOT get water inside containers.

## **Section 6 - ACCIDENTAL RELEASE MEASURES**

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks:

Vacuum or sweep up material and place into a suitable disposal container. Clean up spills immediately, observing precautions in the Protective Equipment section. Avoid generating dusty conditions.

Provide ventilation.

## **Section 7 - HANDLING and STORAGE**

Handling:

Wash thoroughly after handling. Use with adequate ventilation.

Minimize dust generation and accumulation. Avoid contact with eyes, skin, and clothing. Keep container tightly closed. Avoid ingestion and inhalation.

Storage:

Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances.

## **Section 8 - EXPOSURE CONTROLS, PERSONAL PROTECTION**

Engineering Controls:

Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate ventilation to keep airborne concentrations low.

Exposure Limits CAS# 3813-52-3: Personal Protective Equipment Eyes: Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin:

Wear appropriate protective gloves to prevent skin exposure.

Clothing:

Wear appropriate protective clothing to prevent skin exposure.

Respirators:

Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

## **Section 9 - PHYSICAL AND CHEMICAL PROPERTIES**

Physical State: Powder

Color: white

Odor: Not available.

pH: Not available.

Vapor Pressure: Not available.

Viscosity: Not available.

Boiling Point: Not available.

Freezing/Melting Point: 175 deg C

Autoignition Temperature: Not applicable.

Flash Point: Not applicable.

Explosion Limits, lower: Not available.

Explosion Limits, upper: Not available.

Decomposition Temperature:

Solubility in water:

Specific Gravity/Density:

Molecular Formula: C<sub>9</sub>H<sub>10</sub>O<sub>4</sub>

Molecular Weight: 182.18

## **Section 10 - STABILITY AND REACTIVITY**

Chemical Stability:

Stable at room temperature in closed containers under normal storage and handling conditions.

Conditions to Avoid:

Incompatible materials, dust generation, excess heat, strong oxidants.

Incompatibilities with Other Materials:

Oxidizing agents.

Hazardous Decomposition Products:

Carbon monoxide, irritating and toxic fumes and gases, carbon dioxide.

Hazardous Polymerization: Has not been reported

## **Section 11 - TOXICOLOGICAL INFORMATION**

RTECS#:

CAS# 3813-52-3 unlisted.

LD50/LC50:

Not available.

Carcinogenicity:

Cis-5-Norbornene-Endo-2,3-Dicarboxylic Acid - Not listed by ACGIH, IARC, or NTP.

## **Section 12 - ECOLOGICAL INFORMATION**

### **Section 13 - DISPOSAL CONSIDERATIONS**

Dispose of in a manner consistent with federal, state, and local regulations.

### **Section 14 - TRANSPORT INFORMATION**

IATA

Shipping Name: TOXIC SOLID, ORGANIC, N.O.S.\*

Hazard Class: 6.1

UN Number: 2811

Packing Group: III

IMO

Shipping Name: TOXIC SOLID, ORGANIC, N.O.S.

Hazard Class: 6.1

UN Number: 2811

Packing Group: III

RID/ADR

Shipping Name: TOXIC SOLID, ORGANIC, N.O.S.

Hazard Class: 6.1

UN Number: 2811

Packing group: III

### **Section 15 - REGULATORY INFORMATION**

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols: XN

Risk Phrases:

R 20/21 Harmful by inhalation and in contact with skin.

Safety Phrases:

S 23 Do not inhale gas/fumes/vapour/spray.

WGK (Water Danger/Protection)

CAS# 3813-52-3: No information available.

Canada

None of the chemicals in this product are listed on the DSL/NDL list.

CAS# 3813-52-3 is not listed on Canada's Ingredient Disclosure List.

US FEDERAL

TSCA

CAS# 3813-52-3 is not listed on the TSCA inventory.

It is for research and development use only.

### **SECTION 16 - ADDITIONAL INFORMATION**

N/A