



# MATERIAL SAFETY DATA SHEET

## Crotonitrile

(Mixture of cis- and trans- Isomer)

### 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**PRODUCT NAME:** Crotonitrile  
(Mixture of cis- and trans- Isomer)

**SYNONYM:** 2-Butenenitrile (cis- and trans- mixture)

**MOLECULAR FORMULA:** C<sub>4</sub>H<sub>5</sub>N

**MOLECULAR WEIGHT:** 67.09 g/mol

**CREATION DATE:** Mar 02 2007

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**REVISION DATE:** Jan 13 2016

### 2. HAZARDS IDENTIFICATION

**PHYSICAL HAZARDS**

**Flammable liquids** Category 2

**HEALTH HAZARDS**

**Acute toxicity (Oral)** Category 4

**Skin corrosion/irritation** Category 2

**Serious eye damage/eye irritation** Category 2A

**ENVIRONMENTAL HAZARDS** Not classified

**GHS label elements**

**Pictograms or hazard symbols**

**Signal word** Danger

**Hazard statement**

Highly flammable liquid and vapor Harmful if swallowed Causes skin irritation.

**Precautionary statements [Prevention]**

Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

Keep container tightly closed. Use explosion-proof electrical/ventilating/lighting equipment. Take precautionary measures against ignition by the static discharge and the spark. Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling. Wear protective gloves/eye protection/face protection.

**[Response]** IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. Rinse mouth.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash before reuse.

**[Storage]** Store in a well-ventilated place. Keep cool.

**[Disposal]** Dispose of contents/container through a waste management company authorized by the local government

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### 3. COMPOSITION, INFORMATION ON INGREDIENTS

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CAS No.	EC-No.	Chemical Name	Percent
4786-20-3	225-335-1	Crotonitrile	>98

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### 4. FIRST AID MEASURES

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**Inhalation:** Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical advice/attention if you feel unwell.

**Skin contact:** Remove/Take off immediately all contaminated clothing. Gently wash with plenty of soap and water. If skin irritation or rash occurs: Get medical advice/attention.

**Eye contact:** Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

**Ingestion:** Call a POISON CENTER or doctor/physician if you feel unwell. Rinse mouth.

**Protection of first-aiders:** A rescuer should wear personal protective equipment, such as rubber gloves and airtight goggles.

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## 5. FIRE FIGHTING MEASURES

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**Suitable extinguishing media:** Dry chemical, foam, carbon dioxide.

**Extinguishing media not to be used :** Water (It may scatter and spread fire.)

**Specific hazards:** Take care as it may decompose upon combustion or in high temperatures to generate poisonous fume.

**Specific methods:** Fire-extinguishing work is done from the windward and the suitable fire-extinguishing method according to the surrounding situation is used. Uninvolved persons should evacuate to a safe place. In case of fire in the surroundings: Keep containers cool by spraying with water. Eliminate all ignition sources if safe to do so.

**Special protective equipment for firefighters:** When extinguishing fire, be sure to wear personal protective equipment.

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## 6. ACCIDENTAL RELEASE MEASURES

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**Personal precautions, protective equipment and emergency procedures:** Use personal protective equipment. Keep people away from and upwind of spill/leak. Ensure adequate ventilation. Entry to non-involved personnel should be controlled around the leakage area by roping off, etc.

**Environmental precautions:** Prevent product from entering drains.

**Methods and materials for containment and cleaning up:** Absorb spilled material in dry sand or inert absorbent before recovering it into an airtight container. In case of large amount of spillage, contain a spill by bunding. Adhered or collected material should be promptly disposed of, in accordance with appropriate laws and regulations.

**Prevention of secondary hazards:** Remove all sources of ignition. Fire-extinguishing devices should be prepared in case of a fire. Use spark-proof tools and explosion-proof equipment.

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## 7. HANDLING AND STORAGE

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**Handling Technical measures:** Handling is performed in a well ventilated place. Wear suitable protective equipment. Prevent generation of vapor or mist. Keep away from heat/sparks/open flame/hot surfaces. -No smoking. Take measures to prevent the buildup of electrostatic charge. Use explosion-proof equipment. Wash hands and face thoroughly after handling. Use a closed system if possible. Use ventilation, local exhaust if vapor or aerosol will be generated.

**Advice on safe handling:** Avoid contact with skin, eyes and clothing.

**Storage conditions:** Keep container tightly closed. Store in a cool, dark and well-ventilated place. Store locked up. Store away from incompatible materials such as oxidizing agents.

**Packaging material:** Law is followed.

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## 8. EXPOSURE CONTROLS, PERSONAL PROTECTION

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**Engineering controls:** Install a closed system or local exhaust. Also install safety shower and eye bath.

**Control parameters:** Not set up

### Personal protective equipment

**Respiratory protection:** Half or full face piece respirator, self-contained breathing apparatus (SCBA), supplied air respirator, etc. Use respirators approved under appropriate government standards and follow local and national regulations.

**Hand protection:** Impervious gloves.

**Eye protection:** Safety goggles. A face-shield, if the situation requires.

**Skin and body protection:** Impervious protective clothing. Protective boots, if the situation requires.

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

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**Physical state (20°C):** Liquid

**Form:** clear

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<b>Color:</b>	Colorless - Slightly pale yellow
<b>Odor:</b>	No data available
<b>pH:</b>	No data available
<b>Melting point/freezing point:</b>	No data available
<b>Boiling Point/Range:</b>	120 – 121 °C
<b>Flash Point:</b>	16 °C – closed cup
<b>Explosive limits</b>	
<b>Lower:</b>	No data available
<b>Upper:</b>	No data available
<b>Density:</b>	0.824 g/cm <sup>3</sup> at 25 °C
<b>Solubility:</b>	No data available

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## 10. STABILITY AND REACTIVITY

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**Stability:** Stable under proper conditions.

**Reactivity:** No special reactivity has been reported.

**Incompatible materials:** oxidizing agents, acids

**Hazardous Decomposition Products:** Carbon monoxide, Carbon dioxide, Nitrogen oxides (NO<sub>x</sub>), Cyanide

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## 11. TOXICOLOGICAL INFORMATION

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**Acute Toxicity:** orl-gpg LD50:272 mg/kg

orl-rat LD50:501 mg/kg

ivn-rbt LDLo: 60 mg/kg

scu-gpg LDLo: 230 mg/kg

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**Skin corrosion/irritation:** No data available

**Serious eye Damage/irritation:** No data available

**Germ cell mutagenicity:** No data available

**Carcinogenicity: ARC =** No data available

**NTP =** No data available

**Reproductive toxicity:** No data available

**RTECS Number:** GQ6322000

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## 12. ECOLOGICAL INFORMATION

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**Crustacea:** No data available

**Algae:** No data available

**Persistence / degradability:** No data available

**Bioaccumulative potential (BCF):** No data available

**Mobility in soil log Pow:** No data available

**Soil adsorption (Koc):** No data available

**Henry's Law Constant (PaM<sup>3</sup>/mol):** No data available

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## 13. DISPOSAL CONSIDERATIONS

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Recycle to process, if possible. Consult your local regional authorities. You may be able to burn in a chemical incinerator equipped with an afterburner and scrubber system but exert extra care in igniting as this material is highly flammable. Observe all federal, state and local regulations when disposing of the substance

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## 14. TRANSPORT INFORMATION

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**Hazards Class:** 3: Flammable liquid.

**UN-No:** 1993

**Proper shipping name:** Flammable liquid, n.o.s.

**Packing group:** II

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## 15. REGULATORY INFORMATION

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**Fire Defense Law:** Class-4 No.1 petroleum Dangerous grade 2 not water-soluble fluid

**Poisonous and Deleterious Substances Control Law:** on Deleterious Substances List.  
**ISHL (Enforcement Order of the Industrial Safety and Health Act Appended Table 1):** Inflammable Substances

**Law for safety of vessels:** Hazardous materials notification, Schedule form No.1  
Flammable liquid

**Water Pollution Control Law:** Harmful substances

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## 16. OTHER INFORMATION

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The information in this safety data sheet is based on data and samples provided. The sheet was written to the best of our ability and according to the state of knowledge at that time. The safety data sheet only constitutes a guideline for the safe handling, use, consumption, storage, transport and disposal of the substances/preparations/mixtures mentioned under point 1. New safety data sheets are written from time to time. Only the most recent versions may be used. Old versions must be destroyed. Unless indicated otherwise word for word on the safety data sheet, the information does not apply to substances/preparations/mixtures in purer form, mixed with other substances or in processes.

The safety data sheet offers no quality specification for the substances/preparations/mixtures in question. Compliance with the instructions in this safety data sheet does not release the user from the obligation to take all measures dictated by common sense, regulations and recommendations or which are necessary and/or useful based on the real applicable circumstances. Godavari Biorefineries Limited does not guarantee the accuracy or exhaustiveness of the information provided.