

 <p>CHEMLABS Quality Our Forte</p>	<p>LEONID CHEMICALS PVT. LTD., BANGALORE</p> <p>An ISO-9001:2008 Certified Company</p> <p>Quality Assurance Department</p>	<p>(CODE) DOCUMENT : WI</p> <p>(CODE) SECTION : WI/SM</p> <p>(DATE) : 01.04.2011</p>	 <p>Issue : 02</p> <p>Rev.: 00</p>
<p>Title: MATERIAL SAFETY DATA SHEET (MSDS): ACRYLONITRILE</p>			<p>1 Page of 1</p>

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product name:
Acrylonitrile

Cat No.:
A094

Synonyms:
Vinyl cyanide

CAS-No. :
107-13-1

Company Information:

LEONID CHEMICALS Pvt Ltd,
62/A-2, 1st Stage,
Yeshvanthpur Industrial Suburb,
Ashoka puram School Road,
Bangalore -22, Karnataka, INDIA
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2. HAZARDS IDENTIFICATION

Classification of the substance or mixture
Classification according to Regulation (EC) No 1272/2008 [EU-GHS/CLP]
Flammable liquids (Category 2)
Carcinogenicity (Category 1B)
Acute toxicity, Inhalation (Category 3)
Acute toxicity, Dermal (Category 3)
Acute toxicity, Oral (Category 3)
Specific target organ toxicity - single exposure (Category 3)
Skin irritation (Category 2)
Serious eye damage (Category 1)
Skin sensitization (Category 1)
Chronic aquatic toxicity (Category 2)

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<p>Title: MATERIAL SAFETY DATA SHEET (MSDS): ACRYLONITRILE</p>			<p>2 Page of 1</p>

Classification according to EU Directives 67/548/EEC or 1999/45/EC

Highly flammable. May cause cancer. Toxic by inhalation, in contact with skin and if swallowed. Irritating to respiratory system and skin. Risk of serious damage to eyes. May cause sensitization by skin contact.

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

Label elements

Labelling according Regulation (EC) No 1272/2008 [CLP]

Pictogram

Signal word Danger

Hazard statement(s)

H225 Highly flammable liquid and vapour.

H301 Toxic if swallowed.

H311 Toxic in contact with skin.

H315 Causes skin irritation.

H317 May cause an allergic skin reaction.

H318 Causes serious eye damage.

H331 Toxic if inhaled.

H335 May cause respiratory irritation.

H350 May cause cancer.

H411 Toxic to aquatic life with long lasting effects.

Precautionary statement(s)

P201 Obtain special instructions before use.

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.

P273 Avoid release to the environment.

P280 Wear protective gloves/ eye protection/ face protection.

P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician.

Supplemental Hazard

Statements

none

Restricted to professional users.

According to European Directive 67/548/EEC as amended.

Hazard symbol(s)

R-phrases(s)

R45 May cause cancer.

R23/24/25 Also toxic by inhalation, in contact with skin and if swallowed.

R11 Highly flammable.

R37/38 Irritating to respiratory system and skin.

R41 Risk of serious damage to eyes.

R43 May cause sensitization by skin contact.

R51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

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<p>Title: MATERIAL SAFETY DATA SHEET (MSDS): ACRYLONITRILE</p>			<p>3 Page of 1</p>

S-phrase(s)

S53 Avoid exposure - obtain special instructions before use.

S45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

S61 Avoid release to the environment. Refer to special instructions/ Safety data sheets. Restricted to professional users.

2.3 Other hazards

Lachrymator., Vesicant.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Formula: C_3H_3N

Molecular Weight: 53.06 g/mol

CAS-No.: 107-13-1

4. FIRST AID MEASURES

Description of first aid measures

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance.

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. Take victim immediately to hospital. 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

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

Most important symptoms and effects, both acute and delayed

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

Indication of any immediate medical attention and special treatment needed
no data available

5. FIREFIGHTING MEASURES

Extinguishing media

Suitable extinguishing media

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

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<p>Title: MATERIAL SAFETY DATA SHEET (MSDS): ACRYLONITRILE</p>			<p>4 Page of 1</p>

Special hazards arising from the substance or mixture

Carbon oxides, nitrogen oxides (NO_x)

Advice for firefighters

Wear self contained breathing apparatus for fire fighting if necessary.

Further information

Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Wear respiratory protection. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low 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 and materials for containment and cleaning up

Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13).

Reference to other sections

For disposal see section 13.

7. HANDLING AND STORAGE

Precautions for safe handling

Avoid exposure - obtain special instructions before use. Avoid contact with skin and eyes.

Avoid inhalation of vapour or mist.

Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.

Conditions for safe storage, including any incompatibilities

Store in cool place. 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.

Light sensitive.

Specific end uses

no data available

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Components with workplace control parameters

Exposure controls

Appropriate engineering controls

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<p>Title: MATERIAL SAFETY DATA SHEET (MSDS): ACRYLONITRILE</p>			<p>5 Page of 1</p>

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

Personal protective equipment

Eye/face protection

Tightly fitting safety goggles. Faceshield (8-inch minimum). Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique

(without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices.

Wash and dry hands.

The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Body Protection

Complete suit protecting against chemicals, Flame retardant antistatic protective clothing, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

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).

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

a) Appearance Form: clear, liquid

Colour: colourless

b) Odour: no data available

c) Odour Threshold: no data available

d) pH: no data available

e) Melting point/freezing point

Melting point/range: -83 °C - lit.

f) Initial boiling point and boiling range: 77 °C

g) Flash point: -5 °C - closed cup

h) Evaporation rate: no data available

i) Flammability (solid, gas): no data available

j) Upper/lower flammability or explosive limits

Upper explosion limit: 17 %(V)

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<p>Title: MATERIAL SAFETY DATA SHEET (MSDS): ACRYLONITRILE</p>			<p>6 Page of 1</p>

Lower explosion limit: 3 %(V)
k) Vapour pressure: 115 hPa at 20 °C
l) Vapour density: 1.83 - (Air = 1.0)
m) Relative density 0.806 g/cm³
n) Water solubility: soluble
o) Partition coefficient: noctanol/waterlog Pow: 0.25
p) Autoignition temperature: no data available
q) Decomposition temperature: no data available
r) Viscosity: no data available
s) Explosive properties: no data available
t) Oxidizing properties: no data available
Other safety information
Surface tension 27.3 mN/m at 24 °C

10. STABILITY AND REACTIVITY

Reactivity

no data available

Chemical stability

no data available

Possibility of hazardous reactions

no data available

Conditions to avoid

Heat. May polymerize on exposure to light.

Heat, flames and sparks. Extremes of temperature and direct sunlight.

Incompatible materials

Oxidizing agents, Copper

Hazardous decomposition products

Other decomposition products - no data available

11. TOXICOLOGICAL INFORMATION

Information on toxicological effects

Acute toxicity

LD50 Oral - rat - 78 mg/kg

Remarks: Behavioral: Convulsions or effect on seizure threshold. Lungs, Thorax, or Respiration: Dyspnea.

Gastrointestinal: Changes in structure or function of salivary glands.

LC50 Inhalation - rat - 4 h - 333 ppm

Remarks: Sense Organs and Special Senses (Nose, Eye, Ear, and Taste): Eye: Lacrimation.

Behavioral: Tremor. Lungs, Thorax, or Respiration: Dyspnea.

LD50 Dermal - rabbit - 63 mg/kg

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<p>Title: MATERIAL SAFETY DATA SHEET (MSDS): ACRYLONITRILE</p>			<p>7 Page of 1</p>

Remarks: Behavioral:Somnolence (general depressed activity). Prolonged skin contact may cause skin irritation and/or dermatitis.

Skin corrosion/irritation

Skin - rabbit - Severe skin irritation

Serious eye damage/eye irritation

Eyes - rabbit - Moderate eye irritation

Respiratory or skin sensitization

no data available

Germ cell mutagenicity

no data available

Carcinogenicity

This product is or contains a component that has been reported to be probably carcinogenic based on its

IARC, OSHA, ACGIH, NTP, or EPA classification.

Possible human carcinogen

IARC: 2B - Group 2B: Possibly carcinogenic to humans (Acrylonitrile)

Reproductive toxicity

no data available

Specific target organ toxicity - single exposure

May cause respiratory irritation.

Specific target organ toxicity - repeated exposure

no data available

Aspiration hazard

no data available

Potential health effects

Inhalation May be fatal if inhaled. Causes respiratory tract irritation.

Ingestion Toxic if swallowed.

Skin May be fatal if absorbed through skin. Causes skin irritation.

Eyes Causes eye burns.

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

Additional Information

RTECS: AT5250000

12. ECOLOGICAL INFORMATION

Toxicity

Toxicity to daphnia and other aquatic invertebrates

EC50 - Daphnia magna (Water flea) - 7.4 - 10,0 mg/l - 48 h

Persistence and degradability

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<p>Title: MATERIAL SAFETY DATA SHEET (MSDS): ACRYLONITRILE</p>			<p>8 Page of 1</p>

Biodegradability Biotic/Aerobic - Exposure time 28 d
 Bioaccumulative potential
 Bioaccumulation Lepomis macrochirus - 14 d -9.94 µg/l
 Bioconcentration factor (BCF): 48
 Mobility in soil
 no data available
 Results of PBT and vPvB assessment
 no data available
 Other adverse effects
 Toxic to aquatic life.

13. DISPOSAL CONSIDERATIONS

Waste treatment methods
 Product

Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company.
 Contaminated packaging
 Dispose of as unused product.

14. TRANSPORT INFORMATION

UN number
 ADR/RID: 1093 IMDG: 1093 IATA: 1093
 UN proper shipping name
 ADR/RID: ACRYLONITRILE, STABILIZED
 IMDG: ACRYLONITRILE, STABILIZED
 IATA: Acrylonitrile, stabilized
 Passenger Aircraft: Not permitted for transport
 Transport hazard class(es)
 ADR/RID: 3 (6.1) IMDG: 3 (6.1) IATA: 3 (6.1)
 Packaging group
 ADR/RID: I IMDG: I IATA: I
 Environmental hazards
 ADR/RID: yes IMDG Marine pollutant: yes IATA: no
 Special precautions for user
 no data available

15. REGULATORY INFORMATION

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

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<p>Title: MATERIAL SAFETY DATA SHEET (MSDS): ACRYLONITRILE</p>			<p>9 Page of 1</p>

Safety, health and environmental regulations/legislation specific for the substance or mixture

no data available

Chemical Safety Assessment



no data available

16. OTHER INFORMATION

Further information

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Leonid Chemicals Pvt. Ltd. be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, however arising, even if Leonid Chemicals Pvt. Ltd. has been advised of the possibility of such damages.


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Title: SPECIFICATION MANUAL - ACRYLONITRILE			1 Page of 1

Specification manual - Acrylonitrile

C₃H_{3.5}N

Mol Wt: 41.05

Product : Acrylonitrile LR
Description : Clear colourless liquid
Cat No : A024
Cas No : 107-13-1
Prepared Date : 07.03.2005
Approved Date : 07.03.2005

REVISION HISTORY				
Issue/Rev	Description of Change		Author	Effective Date
01/00	Initial Release		S. Paul Joshua	07.03.2005
02/00	Reviewed no changes		S. Paul Joshua	01.04.2011
Next Review Due :		02.04.2015		
To be reviewed by :		Head-QC/QA		

Sl. No.	Tests	Specification
		LR
1	Assay (GC)	Min 99%
2	Water	0.5%
3	Boiling range	75-78°C
4	NVM	0.005%
5	Density	0.806 g/mL

Approved By: S.Paul Joshua, Head Quality Control and Quality Assurance

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