



**LEONID CHEMICALS PVT. LTD.,
BANGALORE**

An ISO-9001:2008 Certified Company

Quality Assurance Department

(CODE) DOCUMENT : WI

(CODE) SECTION : WI/SM

(DATE) : 01.04.2011



Issue : 02

Rev.: 00

Title: MATERIAL SAFETY DATA SHEET (MSDS): ACRYLONITRILE

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SECTION 1- CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

MSDS Name: Acrylonitrile

Catalog Numbers:A093, A094

Synonyms: Vinyl cyanide

CAS-No. : 107-13-1

Company Information:

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Yeshwanthpur Industrial Suburb,
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SECTION 2. HAZARDS IDENTIFICATION

2.1 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)

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.

2.2 Label elements

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

Signal word **Danger**

Hazard statement(s)

H225

Highly flammable liquid and vapour.



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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-phrase(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.

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.



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SECTION 3: Composition/information on ingredients

3.1 Substances

Synonyms : Vinyl cyanide

Formula : C₃H₃N

Molecular Weight : 53,06 g/mol

Component	Concentration
Acrylonitrile	
CAS-No.	107-13-1
EC-No.	203-466-5
Index-No.	608-003-00-4

SECTION 4: First aid measures

4.1 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.

4.2 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

4.3 Indication of any immediate medical attention and special treatment needed

no data available

SECTION 5: Firefighting measures



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- 5.1 Extinguishing media**
Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
- 5.2 Special hazards arising from the substance or mixture**
Carbon oxides, nitrogen oxides (NOx)
- 5.3 Advice for firefighters**
Wear self contained breathing apparatus for fire fighting if necessary.
- 5.4 Further information**
Use water spray to cool unopened containers.

SECTION 6: Accidental release measures

- 6.1 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.
- 6.2 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.
- 6.3 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).
- 6.4 Reference to other sections**
For disposal see section 13.

SECTION 7: Handling and storage

- 7.1 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.
- 7.2 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. Recommended storage temperature: 2 - 8 °C



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Light sensitive.

- 7.3 Specific end use(s)
no data available

SECTION 8: Exposure controls/personal protection

- 8.1 Control parameters
Components with workplace control parameters

- 8.2 Exposure controls
Appropriate engineering controls
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.

Full contact

Material: butyl-rubber
Minimum layer thickness: 0,3 mm
Break through time: 480 min
Material tested: Butoject

Splash protection

Material: Chloroprene
Minimum layer thickness: 0,6 mm
Break through time: 35 min
Material tested: Camapren
test method: EN374

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an Industrial Hygienist familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.



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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).

SECTION 9: Physical and chemical properties

Physical State	: Liquid
Appearance	: Colorless
odor	: Garlic-like
pH	: 5.9-7.6 5% aq. sol.
Vapor Pressure	: 120 mbar @ 20 °C
Vapor Density	: 1.83 (Air = 1.0)
Boiling Point/Range	: 77.3°C / 171.1°F
Melting Point/Range	: -83.5°C / -118.3°F
Flash Point	: -5°C / 23°F
Autoignition Temperature	: 480°C / 896°F
Explosion Limits	
Lower	: 2.8
Upper	: 28
Water Solubility	: 73.5 G/L WATER (20° C)
Specific Gravity	: 0.800
Molecular Formula	: C3 H3 N
Molecular Weight	: 53.06

SECTION 10: Stability and reactivity

- 10.1 Reactivity
no data available
- 10.2 Chemical stability
no data available
- 10.3 Possibility of hazardous reactions
no data available
- 10.4 Conditions to avoid



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Heat. May polymerize on exposure to light.
Heat, flames and sparks. Extremes of temperature and direct sunlight.

10.5 Incompatible materials
Oxidizing agents, Copper

10.6 Hazardous decomposition products
Other decomposition products - no data available

SECTION 11: Toxicological information

11.1 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

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



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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

SECTION 12: Ecological information

- 12.1 Toxicity**
Toxicity to daphnia and other aquatic invertebrates
EC50 - Daphnia magna (Water flea) - 7,4 - 10,0 mg/l - 48 h
- 12.2 Persistence and degradability**
Biodegradability Biotic/Aerobic - Exposure time 28 d
- 12.3 Bioaccumulative potential**
Bioaccumulation Lepomis macrochirus - 14 d -9,94 µg/l
Bioconcentration factor (BCF): 48
- 12.4 Mobility in soil**
no data available
- 12.5 Results of PBT and vPvB assessment**
no data available
- 12.6 Other adverse effects**
Toxic to aquatic life.

SECTION 13: Disposal considerations



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13.1 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.

SECTION 14: Transport information

14.1 UN number

ADR/RID: 1093 IMDG: 1093 IATA: 1093

14.2 UN proper shipping name

ADR/RID: ACRYLONITRILE, STABILIZED

IMDG: ACRYLONITRILE, STABILIZED

IATA: Acrylonitrile, stabilized

Passenger Aircraft: Not permitted for transport

14.3 Transport hazard class(es)

ADR/RID: 3 (6.1) IMDG: 3 (6.1) IATA: 3 (6.1)

14.4 Packaging group

ADR/RID: I IMDG: I IATA: I

14.5 Environmental hazards

ADR/RID: yes IMDG Marine Pollutant: yes IATA: no

14.6 Special precautions for user

no data available

SECTION 15: Regulatory information

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

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

no data available

15.2 Chemical Safety Assessment

no data available



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SECTION 16 - ADDITIONAL 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, howsoever arising, even if Leonid Chemicals Pvt. Ltd. has been advised of the possibility of such damages.



	LEONID CHEMICALS PVT. LTD., BANGALORE An ISO-9001:2008 Certified Company Quality Assurance Department	(CODE) DOCUMENT : R/QPM/8.2.4/06	
		(CODE) SECTION : A094	
Title: SPECIFICATION MANUAL - ACRYLONITRILE			Issue : 02 Rev.: 00 1 Page of 1

Specification manual - Acrylonitrile

C_3H_3N



Mol Wt: 53.06

Product : Acrylonitrile LR
Description : Clear colourless liquid
Cat No : A094
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	Protocol
		LR	
1	Assay (GC)	Min 99%	2/4/03
2	Water	0.5%	2/3.1-19
3	Boiling range	75-78°C	2/3.1-03
4	NVM	0.005%	2/3.1-01
5	Density	0.806 g/mL	2/3.1-4.2

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

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