



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

**An ISO-9001:2008 Certified Company**

**Quality Assurance Department**

(CODE) DOCUMENT : WI

(CODE) SECTION : WI/SM

(DATE) : 01.04.2010



Issue : 02

Rev.: 00

Title: MATERIAL SAFETY DATA SHEET (MSDS): ACETONITRILE

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## SECTION 1- CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

MSDS Name: Acetonitrile

Catalog Numbers: A024, A025, A998, A129, A130, A900, A029, A393

Synonyms: Methyl cyanide, ACN

CAS-No. : 75-05-8

Company Information:

**LEONID CHEMICALS Pvt Ltd,**  
62/A2, 1<sup>st</sup> Stage,  
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## SECTION 2. HAZARDS IDENTIFICATION

### 2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008

Flammable liquids (Category 2), H225

Acute toxicity, Oral (Category 4), H302

Acute toxicity, Inhalation (Category 4), H332

Acute toxicity, Dermal (Category 4), H312

Eye irritation (Category 2), H319

For the full text of the H-Statements mentioned in this Section, see Section 16.

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

F Highly flammable R11

Xn Harmful R20/21/22

Xi Irritant R36

For the full text of the R-phrases mentioned in this Section, see Section 16.

### 2.2 Label elements

Labelling according Regulation (EC) No 1272/2008

Signal word Danger

Hazard statement(s)

H225

Highly flammable liquid and vapour.



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H302 + H312 + H332

Harmful if swallowed, in contact with skin or if inhaled

H319

Causes serious eye irritation.

### Precautionary statement(s)

P210

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

P280

Wear protective gloves/ protective clothing.

P305 + P351 + P338

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Supplemental Hazard Statements

none

### 2.3 Other hazards - none

## SECTION 3: Composition/information on ingredients

### 3.1 Substances

Synonyms

: Methyl cyanide  
ACN

Formula

: C<sub>2</sub>H<sub>3</sub>N

Molecular Weight

: 41,05 g/mol

CAS-No.

: 75-05-8

EC-No.

: 200-835-2

Index-No.

: 608-001-00-3

Registration number

: 01-2119471307-38-XXXX

Hazardous ingredients according to Regulation (EC) No 1272/2008

Component	Classification	Concentration
Acetonitrile	Flam. Liq. 2; Acute Tox. 4; Eye Irrit. 2; H225, H302 + H312 + H332, H319	-

Hazardous ingredients according to Directive 1999/45/EC

Component	Classification	Concentration
Acetonitrile	F, Xn, R11 - R20/21/22 - R36	-



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For the full text of the H-Statements and R-Phrases mentioned in this Section, see Section 16

#### 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. 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

The most important known symptoms and effects are described in the labelling ( see section 2.2) and/or in section 11

##### 4.3 Indication of any immediate medical attention and special treatment needed

no data available

#### SECTION 5: Firefighting measures

##### 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

no data available

##### 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.



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## SECTION 6: Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. 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.

For personal protection see section 8.

### 6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

### 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 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.

For precautions see section 2.2.

### 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.

Handle and store under inert gas.

### 7.3 Specific end use(s)

A part from the uses mentioned in section 1.2 no other specific uses are stipulated

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

Components with workplace control parameters

Derived No Effect Level (DNEL)



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Application Area	Exposure routes	Health effect	Value
Workers	Inhalation	Acute local effects, Acute systemic effects	68 mg/m <sup>3</sup>
Workers	Skin contact	Long-term systemic effects	32,2mg/kg BW/d
Workers	Inhalation	Long-term local effects, Long-term systemic effects	68 mg/m <sup>3</sup>
Consumers	Inhalation	Acute local effects	220 mg/m <sup>3</sup>
Consumers	Inhalation	Acute systemic effects	22 mg/m <sup>3</sup>
Consumers	Inhalation	Long-term systemic effects	4,8 mg/m <sup>3</sup>

#### Predicted No Effect Concentration (PNEC)

Compartment	Value
Water	10 mg/l
Soil	2,41 mg/kg
Marine water	1 mg/l
Fresh water	10 mg/l
Fresh water sediment	7,53 mg/kg
Onsite sewage treatment plant	32 mg/l

#### 8.2 Exposure controls

Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

#### Personal protective equipment

##### Eye/face protection

Face shield and safety glasses 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.





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#### Full contact

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

#### Splash contact

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

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 and safety officer 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.

#### 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).

#### Control of environmental exposure

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

### SECTION 9: Physical and chemical properties

#### 9.1 Information on basic physical and chemical properties

- a) Appearance Form : clear, liquid  
Colour : colourless
- b) Odour : ether-like
- c) Odour Threshold : no data available



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- d) pH : no data available
- e) Melting point/freezing point : Melting point/range: -48 °C - lit.
- f) Initial boiling point and boiling range : 81 - 82 °C - lit.
- g) Flash point : 2,0 °C - closed cup
- h) Evaporation rate : 5,8
- i) Flammability (solid, gas) : no data available
- j) Upper/lower flammability or explosive limits : Upper explosion limit: 16 %(V)  
: Lower explosion limit: 3 %(V)
- k) Vapour pressure : 73,18 hPa at 15 °C  
: 121,44 hPa at 25 °C  
: 413,23 hPa at 55 °C  
: 98,64 hPa at 20 °C
- l) Vapour density : 1,42 - (Air = 1.0)
- m) Relative density : 0,786 g/cm<sup>3</sup> at 25 °C
- n) Water solubility : completely soluble
- o) Partition coefficient: noctanol/water : log Pow: -0,54 at 25 °C
- p) Auto-ignition temperature : 524,0 °C
- q) Decomposition temperature : no data available
- r) Viscosity : no data available
- s) Explosive properties : Not explosive
- t) Oxidizing properties : The substance or mixture is not classified as oxidizing.



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## 9.2 Other safety information

Surface tension 29,0 mN/m at 20,0 °C  
Relative vapor density 1,42 - (Air = 1.0)

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

no data available

### 10.2 Chemical stability

Stable under recommended storage conditions.

### 10.3 Possibility of hazardous reactions

no data available

### 10.4 Conditions to avoid

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

### 10.5 Incompatible materials

acids, Bases, Oxidizing agents, Reducing agents, Alkali metals

### 10.6 Hazardous decomposition products

Other decomposition products - no data available  
In the event of fire: see section 5

## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

#### Acute toxicity

LD50 Oral - rat - male - 1.320 - 6.690 mg/kg

LC50 Inhalation - mouse - 4 h - 3587 ppm

(OECD Test Guideline 403)

LC50 Inhalation - rat - 4 h - 26,8 mg/l

LD50 Dermal - rabbit - male and female - > 2.000 mg/kg

(OECD Test Guideline 402)

#### Skin corrosion/irritation

Skin - rabbit

Result: No skin irritation

(OECD Test Guideline 404)

#### Serious eye damage/eye irritation

Eyes - rabbit

Result: Irritating to eyes.

(OECD Test Guideline 405)





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### Respiratory or skin sensitization

Buehler Test - guinea pig

Did not cause sensitization on laboratory animals.

(OECD Test Guideline 406)

### Germ cell mutagenicity

Hamster

ovary

Result: negative

Mutation in mammalian somatic cells.

Ames test

S. typhimurium

Result: Not mutagenic in Ames Test.

Hamster

ovary

Result: Equivocal evidence.

Sister chromatid exchange

Mutagenicity (micronucleus test)

mouse

Result: Positive results were obtained in some in vivo tests.

### Carcinogenicity

No evidence of carcinogenicity in animal studies (when indicated)

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.

### Reproductive toxicity

Animal testing did not show any effects on fertility.

### Specific target organ toxicity - single exposure

The substance or mixture is not classified as specific target organ toxicant, single exposure.

### Specific target organ toxicity - repeated exposure

The substance or mixture is not classified as specific target organ toxicant,

repeated exposure.

Aspiration hazard

No aspiration toxicity classification

### Additional Information

RTECS: AL7700000



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Treat as cyanide poisoning., Always have on hand a cyanide first-aid kit, together with proper instructions. The onset of symptoms is generally delayed pending conversion to cyanide. Nausea, Vomiting, Diarrhoea, Headache, Dizziness, Rash, Cyanosis, excitement, depression, Drowsiness, impaired judgment, Lack of coordination, stupor, death

## SECTION 12: Ecological information

### 12.1 Toxicity

Toxicity to fish

LC50 - Pimephales promelas (fathead minnow) -

1.640,00 mg/l - 96 h

NOEC - Oryzias latipes - 102 mg/l - 21 d

Toxicity to daphnia and  
other aquatic  
invertebrates

EC50 - Daphnia magna (Water flea) - 3.600 mg/l - 48 h  
(OECD Test Guideline 202)

NOEC - Daphnia magna (Water flea) - 160 mg/l - 21 d

### 12.2 Persistence and degradability

Biodegradability

Result: 84 % - Readily biodegradable.  
(OECD Test Guideline 301C)

### 12.3 Bioaccumulative potential

no data available

### 12.4 Mobility in soil

Not expected to adsorb on soil.

### 12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

### 12.6 Other adverse effects

Avoid release to the environment.

Stability in water

Remarks: Hydrolyses slowly.

## SECTION 13: Disposal considerations

### 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**



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Dispose of as unused product.

### SECTION 14: Transport information

**14.1 UN number**

ADR/RID: 1648      IMDG: 1648      IATA: 1648

**14.2 UN proper shipping name**

ADR/RID: ACETONITRILE  
IMDG: ACETONITRILE  
IATA: Acetonitrile

**14.3 Transport hazard class(es)**

ADR/RID: 3      IMDG: 3      IATA: 3

**14.4 Packaging group**

ADR/RID: II      IMDG: II      IATA: II

**14.5 Environmental hazards**

ADR/RID: no      IMDG Marine Pollutant: no      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**

A Chemical Safety Assessment has been carried out for this substance.

### SECTION 16: Other information

Full text of H-Statements referred to under sections 2 and 3.

Acute Tox.	Acute toxicity
Eye Irrit.	Eye irritation
Flam. Liq.	Flammable liquids
H225	Highly flammable liquid and vapour.
H302	Harmful if swallowed.
H302 + H312 +	



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H332 Harmful if swallowed, in contact with skin or if inhaled  
H312 Harmful in contact with skin.

**Full text of R-phrases referred to under sections 2 and 3**

F Highly flammable  
Xn Harmful  
R11 Highly flammable.  
R20/21/22 Harmful by inhalation, in contact with skin and if swallowed.  
R36 Irritating to eyes.

#### SECTION 17 - 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.

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	<b>LEONID CHEMICALS PVT. LTD., BANGALORE</b> An ISO-9001:2008 Certified Company <b>Quality Assurance Department</b>	(CODE) DOCUMENT : R/QPM/8.2.4/06	
		(CODE) SECTION : A029	
Title: SPECIFICATION MANUAL – Acetonitrile for HPLC			Issue : 02 Rev.: 01
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### Specification manual – Acetonitrile for HPLC

**C<sub>2</sub>H<sub>3</sub>N**

**MW: 41.05**



**Product** : Acetonitrile for HPLC  
**Description** : Clear liquid  
**Cat no.** : A029  
**Cas no.** : 75-05-8  
**Prepared Date** : 24-08-2012  
**Approved Date** : 24-08-2012

REVISION HISTORY			
Issue/Rev	Description of Change	Author	Effective Date
01/00	Initial Release	S. Paul Joshua	24.11.2008
02/01	Specification	S. Paul Joshua	24.08.2012
Next Review Due :	02.04.2015		
To be reviewed by :	Head-QC/QA		

Sl.no.	Tests	Limits		Protocol
1	Assay (GC)	Min 99.8 %		2/4/03
2	Water	≤ 0.05 %		2/3-1-19
3	NVM	≤ 0.0005 %		2/3-1-01
4	Acidity	≤ 0.001 %		
5	Density@20°C	0.782-0.783 g/ml		2/3.1-4.2
6	UV	λ max(nm)	Transmittance	2/4/07
		200	Min 90 %	
		210	Min 95 %	
		220	Min 98 %	
		230	Min 99 %	

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



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		(CODE) SECTION : A024	
Title: SPECIFICATION MANUAL - ACETONITRILE			Issue : 02 Rev.: 02 1   Page of 1

### Specification manual - Acetonitrile

$C_2H_3N$

Mol Wt: 41.05

**Product** : Acetonitrile LR  
**Description** : Clear colourless liquid  
**Cat No** : A024  
**Cas No** : 75-05-8  
**Prepared Date** : 20.05.2013  
**Approved Date** : 20.05.2013

REVISION HISTORY			
Issue/Rev	Description of Change	Author	Effective Date
01/00	Initial Release	S. Paul Joshua	07.03.2005
02/01	Specification	S. Paul Joshua	20.05.2013
02/02	Included "Description" in the Tests	S. Paul Joshua	17.06.2013
Next Review Due :	02.04.2015		
To be reviewed by :	Head-QC/QA		

Sl. No.	Tests	Specification	Protocol
		LR	
1	Description	Clear colourless liquid	LCPL
2	Assay (GC)	Min 99%	2/4/03
3	Boiling point	81 - 82°C	2/3.1-03
4	Water	0.5%	2/3.1-19
5	Density	0.782 g/ml	2/3.1-4.2
6	NVM	0.005 %	2/3.1-01

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

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		(CODE) SECTION : A393	
Title: SPECIFICATION MANUAL – ACETONITRILE FOR HPLC GRADIENT GRADE			1   Page of 1

### Specification manual – Acetonitrile for HPLC Gradient grade

**CH<sub>3</sub>CN**

**MW: 41.05**

**Product** : Acetonitrile for HPLC Gradient grade  
**Description** : Clear colourless liquid.  
**Cat No** : A393  
**Cas No** : 75-05-8  
**Prepared Date** : 07/02/2013  
**Approved Date** : 07/02/2013

REVISION HISTORY			
Issue/Rev	Description of Change	Author	Effective Date
01/00	Initial Release	S. Paul Joshua	07.02.2013
02/00	Reviewed no changes	S. Paul Joshua	NA
Next Review Due :	02.04.2015		
To be reviewed by :	Head-QC/QA		

SI.no.	Test	Limit	
1	Fluorescence(as Quinine)	at 254nm	≤ 1 ppb
2	Fluorescence(as Quinine)	at 365 nm	≤ 1 ppb
3	Assay (GC)	Min 99.9 %	
4	Water	Max 0.02 %	
5	Free acid(CH <sub>3</sub> COOH)	Max 0.005 %	
6	Free alkali (NH <sub>3</sub> )	Max 0.0005%	
7	NVM	Max 0.001 %	
8	Boiling point	81-82 °C	
9	Density	0.78 g/ml	
10	Gradient grade	210nm	< 5 mAU

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

 <b>Chemlabs</b>	<b>LEONID CHEMICALS PVT. LTD., BANGALORE</b>  <b>An ISO-9001:2008 Certified Company</b>  <b>Quality Assurance Department</b>	(CODE) DOCUMENT : R/QPM/8.2.4/06  (CODE) SECTION : A393	  Issue : 02 Rev.: 00
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11	Gradient grade	254 nm	< 1 mAU
12	UV analysis	$\lambda$ nm	Absorbance
		200	0.1
		210	0.035
		220	0.02
		230	0.01
		240	0.005

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