

 <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 (CODE) SECTION : WI/SM (DATE) : 01.04.2011</p>	 <p>Issue : 02 Rev.: 00</p>
<p>Title: MATERIAL SAFETY DATA SHEET (MSDS): TRIFLUORO ACETIC ACID LR</p>			<p>1 Page of 1</p>

SECTION 1- CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

MSDS Name: Trifluoro acetic acid LR

Catalog Numbers: T112

Synonyms:TFA; Trifluoroethanoic acid, Perfluoroacetic acid

CAS-No. : 76-05-1

Company Information:

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2. HAZARDS IDENTIFICATION

Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 [EU-GHS/CLP]

Skin corrosion (Category 1A)
Chronic aquatic toxicity (Category 3)
Acute toxicity, Inhalation (Category 4)

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

Causes severe burns. Harmful by inhalation. Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Label elements



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

Hazard statement(s)

H314 Causes severe skin burns and eye damage.
H332 Harmful if inhaled.
H412 Harmful to aquatic life with long lasting effects.

Precautionary statement(s)

P273 Avoid release to the environment.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove

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P310 contact lenses, if present and easy to do. Continue rinsing.
 Supplemental Hazard Statements Immediately call a POISON CENTER or doctor/ physician.
 : none

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

Hazard symbol(s)

R-phrase(s)

- R20 Harmful by inhalation.
- R35 Causes severe burns.
- R52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

S-phrase(s)

- S 9 Keep container in a well-ventilated place.
- S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
- S27 Take off immediately all contaminated clothing.
- S28 After contact with skin, wash immediately with plenty of soap and water.
- 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.

Other hazards - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substances

Synonyms : TFA
 Formula : C2HF3O2
 Molecular Weight : 114,02 g/mol



Component	Concentration
CAS-No.	76-05-1
EC-No.	200-929-3
Index-No.	607-091-00-1

4. FIRST AID MEASURES

Description of first aid measures

General advice

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

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If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact

Take off contaminated clothing and shoes immediately. 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.

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., spasm, inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema, burning sensation, Cough, wheezing, laryngitis, Shortness of breath, Headache, Nausea, Vomiting

Indication of any immediate medical attention and special treatment needed

no data available

5. FIREFIGHTING MEASURES

Extinguishing media

Suitable extinguishing media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Special hazards arising from the substance or mixture

Carbon oxides, Hydrogen fluoride
Carbon oxides, Hydrogen fluoride
Carbon oxides, Hydrogen fluoride

Advice for firefighters

Wear self contained breathing apparatus for fire fighting if necessary.



Further information

The product itself does not burn.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.

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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

Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Precautions for safe handling

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.

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.
hygroscopic Store under inert gas.

Specific end uses

no data available

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Components with workplace control parameters

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



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.

Immersion protection

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Material: Chloroprene
Minimum layer thickness: 0,6 mm
Break through time: > 480 min
Material tested: Camapren

Splash protection

Material: Nature latex/chloroprene
Minimum layer thickness: 0,6 mm
Break through time: > 30 min
Material tested: Lapren
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.

Body Protection

Complete suit protecting against chemicals, 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

Appearance Form : liquid
Colour : colourless
Odour : pungent
Odour Threshold : no data available
pH : 1,0 at 1,00000 g/l at 20,0 °C
Melting point/freezing point : Melting point/range: -15,4 °C
Initial boiling point and boiling range : 72,4 °C
Flash point : no data available
Evaporation rate : no data available
Flammability (solid, gas) : no data available
Upper/lower flammability or explosive limits : no data available
Vapour pressure : 130,0 hPa at 20,0 °C
: 142,7 hPa at 25,0 °C
Vapour density : no data available
Relative density : 1,535 g/mL at 25 °C

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Water solubility :soluble
 Partition coefficient:n-octanol/water :log Pow: -2,10
 Autoignition
 Temperature :no data available
 Decomposition
 Temperature :no data available
 Viscosity :no data available
 Explosive properties :no data available
 Oxidizing properties : no data available

Other safety information

no data available

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10. STABILITY AND REACTIVITY

Reactivity

no data available

Chemical stability

no data available

Possibility of hazardous reactions

no data available

Conditions to avoid

no data available

Incompatible materials

Strong bases, Metals, Oxidizing agents, Alcohols, Epoxides, Steel (all types and surface treatments), Aluminum, Exothermic in contact with water, Reacts violently with:, Alkali metals

Hazardous decomposition products

Other decomposition products - no data available

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11. TOXICOLOGICAL INFORMATION

Information on toxicological effects

Acute toxicity

LC50 Inhalation - rat - 10.000 mg/m³

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

Behavioral:Somnolence (general depressed activity). Lungs, Thorax, or Respiration:Dyspnea.

Skin corrosion/irritation

no data available

Serious eye damage/eye irritation

no data available

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Respiratory or skin sensitization
no data available

Germ cell mutagenicity
no data available

Carcinogenicity
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
no data available

Specific target organ toxicity - single exposure
no data available

Specific target organ toxicity - repeated exposure
no data available

Aspiration hazard
no data available

Potential health effects

Inhalation Harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.

Ingestion May be harmful if swallowed. Causes burns.

Skin May be harmful if absorbed through skin. Causes skin burns.

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., spasm, inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema, burning sensation, Cough, wheezing, laryngitis, Shortness of breath, Headache, Nausea, Vomiting

Additional Information

RTECS: AJ9625000

12. ECOLOGICAL INFORMATION



Toxicity

Toxicity to daphnia and EC50 - Daphnia magna (Water flea) - 55,00 mg/l - 24 h
other aquatic
invertebrates

Persistence and degradability

no data available

Bioaccumulative potential

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no data available

Mobility in soil
no data available

Results of PBT and vPvB assessment
no data available

Other adverse effects
Harmful to aquatic life.

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13. DISPOSAL CONSIDERATIONS
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Waste treatment methods
Product
Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging
Dispose of as unused product.

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14. TRANSPORT INFORMATION
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UN number
ADR/RID: 2699 IMDG: 2699 IATA: 2699

UN proper shipping name
ADR/RID: TRIFLUOROACETIC ACID
IMDG: TRIFLUOROACETIC ACID
IATA: Trifluoroacetic acid

Transport hazard class(es)
ADR/RID: 8 IMDG: 8 IATA: 8



Packaging group
ADR/RID: I IMDG: I IATA: I

Environmental hazards
ADR/RID: no IMDG Marine pollutant: no IATA: no

Special precautions for user
no data available

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

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Safety, health and environmental regulations/legislation specific for the substance or mixture
no data available

Chemical Safety Assessment
no data available

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SECTION 16 - ADDITIONAL INFORMATION
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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 : T112	
Title: SPECIFICATION MANUAL - TRIFLUORO ACETIC ACID		(DATE) : 01.04.2011	Rev.: 00
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Specification manual - Trifluoro acetic acid

$C_2HF_3O_2$

MW: 114.02

Product : Trifluoro acetic acid LR
Description : Clear liquid
Cat No : T112
Cas No : 76-05-1
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 (acidimetric)	Min 98%
2	Wt per ml at 20°C	1.487g – 1.489g
3	Boiling point	72°C

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