(Pallav)

| | ic Acid Glacial AR ehyde Free) | | MATERIAL SAFETY DATA SHEE | т |
|----------------|--|--|--|----|
| CAS No 64-19-7 | | -7 | SDS/MSDS | |
| SEC | TION 1: Identification of the su | ubstance/mixture a | nd of the company/undertaking | |
| | Product identifiers Product name | Acetic Acid G : (Aldehyde Fre | lacial AR | |
| | CAS-No. | : 64-19-7 | | |
| 1.2 | Relevant identified uses of th | e substance or mix | ture and uses advised against | |
| | Identified uses | : Laboratory chemi | cals, Industrial & for professional use only. | |
| 1.3 | Details of the supplier of the s Company | : Pallav Chemicals 253, Shiv Shakti Ir | & Solvents Pvt. Ltd ndustrial Estate, Opp Mittal Estate nd, Andheri (E), Mumbai - 400050 | |
| | | : +91 22 4928 4000 : sales@pallavchen | | |
| 1.4 | Emergency telephone number Emergency Phone # | | 00 (9:00am - 6:00 pm) [Office hours] | |
| SEC | TION 2: Hazards identification | I | | |
| 2.1 | Classification of the substance | e or mixture | | |
| | Classification according to Flammable liquids (Category 3 Skin corrosion (Category 1A), | 3), H226 | 1272/2008 | |
| | For the full text of the H-State | ments mentioned in | this Section, see Section 16. | |
| 2.2 | Label elements | | | |
| | Labelling according Regula Pictogram | tion (EC) No 1272/2 | 008 | |
| | Signal word | Danger | | |
| | Hazard statement(s) H226 H314 | Flammable liquid Causes severe sł | and vapour. kin burns and eye damage. | |
| | Precautionary statement(s) P210 | | eat, hot surfaces, sparks, open flames and other | |
| | P260 P280 | Do not breathe du | ust/ fume/ gas/ mist/ vapours/ spray. loves/ protective clothing/ eye protection/ face | Pa |

| | protection. |
|---------------------|--|
| P303 + P361 + P353 | IF ON SKIN (or hair): Take off immediately all contaminated clothing. |
| | Rinse skin with water/shower. |
| P305 + P351 + P338 | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
| P370 + P378 | In case of fire: Use dry powder or dry sand to extinguish. |
| Supplemental Hazard | none |
| Statements | |

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

SECTION 3: Composition/information on ingredients

| 3.1 Substance | s |
|---------------|---|
|---------------|---|

| Synonyms | : Glacial acetic acid |
|---------------------|-------------------------|
| Formula | : CH3COOH |
| Molecular weight | : 60.05 g/mol |
| CAS-No. | : 64-19-7 |
| EC-No. | : 200-580-7 |
| Index-No. | : 607-002-00-6 |
| Registration number | : 01-2119475328-30-XXXX |

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

| Component | | Classification | Concentration |
|-------------|--------------|---|---------------|
| Acetic acid | | | |
| CAS-No. | 64-19-7 | Flam. Liq. 3; Skin Corr. 1A; | <= 100 % |
| EC-No. | 200-580-7 | H226, H314 | |
| Index-No. | 607-002-00-6 | Concentration limits: >= 90 %: Skin Corr. 1A, | |
| | | H314; 25 - < 90 %: Skin Corr. | 1B, |
| | | H314; 10 - < 25 %: S | kin |
| | | Irrit. 2, H315; 10 - < 25 %: Ey | е |
| | | Irrit. 2, H319; | |

For the full text of the H-Statements 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

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.

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 Carbon oxides
- **5.3** Advice for firefighters Wear self-contained breathing apparatus for firefighting 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

Use personal protective equipment. Avoid breathing vapours, 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

Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).\'20 Contain spillage, soak up with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to a container for disposal according to local / national regulations (see section 13).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 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.

Moisture sensitive.

Storage class (TRGS 510): Flammable liquids

7.3 Specific end use(s)

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

SECTION 8: Exposure controls/personal protection

8.1 **Control parameters**

| Derived No Effect Level (DNEL) | | | | | | |
|--------------------------------|--------------|-------------------------|--------------|--|--|--|
| Application Area | Exposure | Health effect | Value | | | |
| | routes | | | | | |
| Workers | Inhalation | Acute local effects | 25 mg/m3 | | | |
| Workers | Inhalation | Long-term local effects | 25 mg/m3 | | | |
| Workers | Skin contact | Long-term local effects | 10mg/kg BW/d | | | |
| Consumers | Inhalation | Acute local effects | 25 mg/m3 | | | |
| Consumers | Inhalation | Long-term local effects | 25 mg/m3 | | | |

Predicted No Effect Concentration (PNEC)

| Compartment | Value |
|------------------------------|-------------|
| Soil | 0.478 mg/kg |
| Marine water | 0.3058 mg/l |
| Fresh water | 3.058 mg/l |
| Marine sediment | 1.136 mg/kg |
| Fresh water sediment | 11.36 mg/kg |
| Sewage treatment plant | 85 mg/l |
| Aquatic intermittent release | 30.58 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

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.

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 (US) or type ABEK (EN 14387) respirator cartridges as a backup to enginee 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

- Form: liquid a) Appearance Colour: colourless pungent
- b) Odour

| | c) | Odour Threshold | No data available | |
|------|-------------------|--|---|--|
| | d) | рН | 2.4 at 60.05 g/l | |
| | e) | Melting point/freezing point | Melting point/range: 16.2 °C - lit. | |
| | f) | Initial boiling point and boiling range | 117 - 118 °C - lit. | |
| | g) | Flash point | 40.0 °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: 19.9 %(V) Lower explosion limit: 4 %(V) | |
| | k) | Vapour pressure | 55.0 mmHg at 50.0 °C 11.4 mmHg at 20.0 °C | |
| | I) | Vapour density | No data available | |
| | m) | Relative density | 1.049 g/cm3 at 25 °C | |
| | n) | Water solubility | completely miscible | |
| | o) | Partition coefficient: n- octanol/water | log Pow: -0.17 | |
| | p) | Auto-ignition temperature | 485.0 °C | |
| | q) | Decomposition temperature | No data available | |
| | r) | Viscosity | No data available | |
| | s) | Explosive properties | No data available | |
| | t) | Oxidizing properties | No data available | |
| 9.2 | Oth | er safety information | | |
| | | Surface tension | 28.8 mN/m at 10.0 °C | |
| SECT | ION | 10: Stability and reactivi | ty | |
| 10.1 | Reactivity | | | |
| | No data available | | | |

ino data avallable

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.

10.5 Incompatible materials Oxidizing agents, Soluble carbonates and phosphates, Hydroxides, Metals, Peroxides, permanganates,

e.g. potassium permanganate, Amines, Alcohols, Nitric acid

10.6 Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Carbon oxides 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 - 3,310 mg/kg(Acetic acid) LC50 Inhalation - Mouse - 1 h - 5620 ppm(Acetic acid) Remarks: Sense Organs and Special Senses (Nose, Eye, Ear, and Taste):Eye:Conjunctive irritation. Sense Organs and Special Senses (Nose, Eye, Ear, and Taste):Eye:Other. Blood:Other changes. LC50 Inhalation - Rat - 4 h - 11.4 mg/l(Acetic acid) LD50 Dermal - Rabbit - 1,112 mg/kg(Acetic acid)

Skin corrosion/irritation

Skin - Rabbit(Acetic acid) Result: Causes severe burns.

Serious eye damage/eye irritation

Eyes - Rabbit(Acetic acid) Result: Corrosive to eyes

Respiratory or skin sensitisation

No data available(Acetic acid)

Germ cell mutagenicity

No data available(Acetic acid)

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(Acetic acid)

Specific target organ toxicity - single exposure No data available(Acetic acid)

Specific target organ toxicity - repeated exposure No data available

Aspiration hazard No data available(Acetic acid)

Additional Information

RTECS: AF1225000

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, Ingestion or inhalation of concentrated acetic acid causes damage to tissues of the respiratory and digestive tracts. Symptoms include: hematemesis, bloody diarrhea, edema and/or perforation of the esophagus and pylorus, pancreatitis, hematuria, anuria, uremia, albuminuria, hemolysis, convulsions, bronchitis, pulmonary edema, pneumonia, cardiovascular collapse, shock, and death. Direct contact or exposure to high concentrations of vapor with skin or eyes can cause: erythema, blisters, tissue destruction with slow healing, skin blackening, hyperkeratosis, fissures, corneal erosion, opacification, iritis, conjunctivitis, and possible blindness., To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.(Acetic acid)

SECTION 12: Ecological information

12.1 Toxicity

| Toxicity to fish | semi-static test LC50 - Oncorhynchus mykiss (rainbow trout) - > 1,000 mg/l - 96 h(Acetic acid) (OECD Test Guideline 203) |
|---|--|
| Toxicity to daphnia and other aquatic invertebrates | EC50 - Daphnia magna (Water flea) - > 300.82 mg/l - 48 h(Acetic acid) (OECD Test Guideline 202) |

12.2 Persistence and degradability

Biodegradability

aerobic - Exposure time 30 d(Acetic acid) Result: 99 % - Readily biodegradable Remarks: Expected to be biodegradable

Biochemical Oxygen 880 mg/g(Acetic acid) Demand (BOD)

12.3 Bioaccumulative potential No data available

12.4 Mobility in soil No data available(Acetic acid)

12.5 Results of PBT and vPvB assessment

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6 Other adverse effects

Additional ecological No data available information

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product

Burn in a chemical incinerator equipped with an afterburner and scrubber b 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: 2 | | IMDG: 2789 | IATA: 2789 |
|------|----------------------------|---|---------------------------|-------------|
| 14.2 | ADR/RID: | shipping name ACETIC ACID, GLACIA ACETIC ACID, GLACIA Acetic acid, glacial | | |
| 14.3 | Transport h | nazard class(es) | | |
| | ADR/RID: 8 | 3 (3) | IMDG: 8 (3) | IATA: 8 (3) |
| 14.4 | Packaging | group | | |
| | ADR/RID: I | | IMDG: II | IATA: II |
| 14.5 | Environme | ntal hazards | | |
| | ADR/RID: r | 10 | IMDG Marine pollutant: no | IATA: no |
| 14.6 | Special pre No data ava | cautions for user ailable | | |

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

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.

- H226 Flammable liquid and vapour.
- H314 Causes severe skin burns and eye damage.
- H315 Causes skin irritation.
- H319 Causes serious eye irritation.

Further information

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Pallav Chemicals & Solvents Pvt. Ltd and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.pallavchemicals.com for additional terms and conditions of sale.