

**PERCHLORIC ACID 0.1 N SOLUTION  
(N/10) (IN GLACIAL ACETIC ACID  
FOR NON-AQUEOUS TITRATION)**

**MATERIAL SAFETY DATA SHEET  
SDS/MSDS**

**SECTION 1: Identification of the substance/mixture and of the company/undertaking**

**1.1 Product identifiers**

Product name : Perchloric Acid 0.1 N Solution (N/10) (in glacial Acetic Acid for non-aqueous titration)

Product Code : 874640

**1.2 Relevant identified uses of the substance or mixture and uses advised against**

Identified uses : Laboratory chemicals, Industrial & for professional use only.

**1.3 Details of the supplier of the safety data sheet**

Company : Central Drug House (P) Ltd  
7/28 Vardaan House  
New Delhi -110002  
INDIA

Telephone : +91 11 49404040

Email : [care@cdhfinechemical.com](mailto:care@cdhfinechemical.com)

**1.4 Emergency telephone number**

Emergency Phone # : +91 11 49404040 (9:00am - 6:00 pm) [Office hours]

**SECTION 2: Hazards identification**

**2.1 Classification of the substance or mixture**

**Classification according to Regulation (EC) No 1272/2008**

Flammable liquid (Category 3), H226  
Corrosive to metals (Category 1), H290  
Skin irritation (Category 1A), H314

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

**2.2 Label elements**

**Labelling according Regulation (EC) No 1272/2008**

Pictogram



Signal word

Warning

Hazard statement(s)

H226

H290

H314

Flammable liquid and vapour.

May be corrosive to metals.

Causes severe skin burns and eye damage.

Precautionary statement(s)

P210

Keep away from heat.

P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.  
 P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.  
 P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
 P308 + P310 IF exposed or concerned: immediately call a POISON CENTER or doctor/ physician.

Supplemental Hazard Statements none

### 2.3 Other hazards

The substance does not fulfill the criteria to be identified as PBT substance or vPvB substance according to Annex XIII of Regulation REACH.

## SECTION 3: Composition/information on ingredients

### 3.1 Mixtures

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

Component	Classification	Concentration
<b>Acetic acid</b>		
CAS-No.	64-19-7	>= 90 - < 100 %
EC-No.	200-580-7	
	Skin Corr. 1A; Eye Dam 1; Flam. Liq. 3; Acute Tox 4(inhal); H314, H318, H226, H332	

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

fresh air. Call in physician.

#### In case of skin contact

Take off immediately all contaminated clothing. Rinse skin with water/ shower. Call a physician immediately.

#### In case of eye contact

Rinse out with plenty of water. Immediately call in ophthalmologist.

#### If swallowed

Make victim drink water (two glasses at most), avoid vomiting (risk of perforation). Call a physician immediately. Do not attempt to neutralise.

### 4.2 Most important symptoms and effects, both acute and delayed

Irritation and corrosion, bronchitis, Shortness of breath, gastric spasms, Nausea, Circulatory collapse, shock, Vomiting Risk of corneal clouding. Risk of blindness!

### 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

Water, Foam, Carbon dioxide (CO2), Dry powder

#### Unsuitable extinguishing media

For this substance/mixture no limitations of extinguishing agents are given.

### 5.2 Special hazards arising from the substance or mixture

Combustible. Vapours are heavier than air and may spread along floors. Pay attention to flashback. Forms explosive mixtures with air at elevated temperatures. Development of hazardous combustion gases or vapours possible in the event of fire. Fire may cause evolution of: Acetic acid vapours

### 5.3 Advice for firefighters

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

### 5.4 Further information

Remove container from danger zone and cool with water. Prevent fire extinguishing water from contaminating surface water or the ground water system. Suppress (knock down) gases/vapours/mists with a water spray jet.

## SECTION 6: Accidental release measures

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

**Advice for non-emergency personnel:** Do not breathe vapours, aerosols. Avoid substance contact. Keep away from heat and sources of ignition. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

**Advice for emergency responders:** Protective equipment see section 8.

### 6.2 Environmental precautions

Do not let product enter drains. Risk of explosion.

### 6.3 Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions. Take up with liquid-absorbent and neutralising material. Dispose of properly. Clean up affected area.

### 6.4 Reference to other sections

See section 8. Exposure controls/personal protection

## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

#### Advice on safe handling

Observe label precautions.

#### Advice on protection against fire and explosion

Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge.

#### Hygiene measures

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

### 7.2 Conditions for safe storage, including any incompatibilities

#### Requirements for storage areas and containers

No metal containers.

#### Storage conditions

Keep container tightly closed in a dry and well-ventilated place. Keep away from heat and sources of ignition. Recommended storage temperature see product label.

### 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

### 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

Safety glasses with side-shields conforming to EN166 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**

Impervious 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 (EN 143) respirator cartridges as a backup to engineering controls. If the 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**

Do not let product enter drains.

**SECTION 9: Physical and chemical properties****9.1 Information on basic physical and chemical properties**

a) Appearance	Form: liquid Colour: Colourless
b) Odour	of acetic acid
c) Odour Threshold	No data available
d) pH	No data available
e) Melting point/freezing point	No data available
f) Initial boiling point and boiling range	No data available
g) Flash point	40°C
h) Evaporation rate	No data available
i) Flammability (solid, gas)	No data available
j) Upper/lower flammability or explosive limits	No data available
k) Vapour pressure	No data available
l) Vapour density	No data available
m) Relative density	1.06 g/cm <sup>3</sup> at 20°C
n) Water solubility	No data available
o) Partition coefficient: n-octanol/water	No data available
p) Auto-ignition 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

**9.2 Other safety information**

No data available

## **SECTION 10: Stability and reactivity**

### **10.1 Reactivity**

Vapour/air-mixtures are explosive at intense warming.

### **10.2 Chemical stability**

Stable under recommended storage conditions.

### **10.3 Possibility of hazardous reactions**

Risk of explosion with: peroxi compounds, perchloric acid, fuming sulfuric acid, phosphorus halides, hydrogen peroxide, chromium(VI) oxide, potassium permanganate, Peroxides, Strong oxidizing agents  
Risk of ignition or formation of inflammable gases or vapours with: Metals, Iron, Zinc, magnesium, Mild steel.

Possible formation of: Hydrogen.

Violent reactions possible with: strong alkalis, anhydrides, Aldehydes, alkali hydroxides, nonmetallic halides, ethanolamine, Acetaldehyde, Alcohols, halogen-halogen compounds, chlorosulfonic acid, chromosulfuric acid, Potassium hydroxide, Nitric acid.

### **10.4 Conditions to avoid**

Heating.

### **10.5 Incompatible materials**

various metals

### **10.6 Hazardous decomposition products**

**Hazardous decomposition products:** Fumes, Carbon monoxide, Carbon dioxide.

## **SECTION 11: Toxicological information**

### **11.1 Information on toxicological effects**

#### **Acute oral toxicity**

Symptoms: If ingested, severe burns of the mouth and throat, as well as a danger of perforation of the oesophagus and the stomach, Nausea, Vomiting, Pulmonary failure possible after aspiration of vomit.

#### **Acute inhalation toxicity**

Symptoms: Pneumonia, bronchitis, Inhalation may lead to the formation of oedemas in the respiratory tract, mucosal irritations, Cough, Shortness of breath, Possible damages:., damage of respiratory tract

#### **Acute dermal toxicity**

No data available

#### **Skin corrosion/irritation**

Mixture causes severe burns.

#### **Serious eye damage/eye irritation**

Causes serious eye irritation. Risk of blindness!

#### **Respiratory or skin sensitisation**

No data available

#### **Germ cell mutagenicity**

No data available

#### **Carcinogenicity**

No data available

#### **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

#### **Additional Information**

No data available

## SECTION 12: Ecological information

### 12.1 Toxicity

No data available

### 12.2 Persistence and degradability

No data available

### 12.3 Bioaccumulative potential

No data available

### 12.4 Mobility in soil

No data available

### 12.5 Results of PBT and vPvB assessment

The substance does not fulfill the criteria to be identified as PBT substance or vPvB substance according to Annex XIII of Regulation REACH.

### 12.6 Other adverse effects

#### Additional ecological information

Harmful effect due to pH shift. Caustic even in diluted form. Discharge into the environment must be avoided.

## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

#### Product

Avoid release to the environment. Dispose in a safe manner in accordance with local/national regulations.

#### Contaminated packaging

Dispose of as unused product.

## SECTION 14: Transport information

### 14.1 UN number

ADR/RID: - 2789

IMDG: - 2789

IATA: - 2789

### 14.2 UN proper shipping name

ADR/RID: ACETIC ACID, GLACIAL

IMDG: ACETIC ACID, GLACIAL

IATA: Acetic Acid, Glacial

### 14.3 Transport hazard class(es)

ADR/RID: - 8(3)

IMDG: - 8(3)

IATA: - 8(3)

### 14.4 Packaging group

ADR/RID: - II

IMDG: - II

IATA: - II

### 14.5 Environmental hazards

ADR/RID: no

IMDG Marine pollutant: Yes

IATA: no

### 14.6 Special precautions for user

No data available

## 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.

H290

May be corrosive to metals.

H314

Causes severe skin burns and eye damage.

**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. Central Drug House (P) Ltd and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See [www.cdhfinechemical.com](http://www.cdhfinechemical.com) for additional terms and conditions of sale.