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

1.1 Product identifiers
Product name : Perchloric Acid 70%

CAS-No. : 7601-90-3

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-10002
INDIA

Telephone : +91 11 49404040
Email : 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
Oxidizing liquids (Category 1), H271
Corrosive to metals (Category 1), H290
Acute toxicity, Oral (Category 4), H302
Skin corrosion (Category 1A), H314
Specific target organ toxicity - repeated exposure (Category 2), Thyroid, H373

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
C Oxidising R 8
C Corrosive R35
Xn Harmful R22
R 5

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):
- H271: May cause fire or explosion; strong oxidiser.
- H290: May be corrosive to metals.
- H302: Harmful if swallowed.
- H314: Causes severe skin burns and eye damage.
- H373: May cause damage to organs (Thyroid) through prolonged or repeated exposure.

Precautionary statement(s):
- P210: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
- P280: Wear protective gloves/ protective clothing/ eye protection/ face protection.
- P303 + P361 + P353: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
- P304 + P340 + P310: IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or doctor/ physician.
- P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P371 + P380 + P375: In case of major fire and large quantities: Evacuate area. Fight fire remotely due to the risk of explosion.

Supplemental Hazard Statements: None


Hazard symbol(s):
- O: Oxidising
- C: Corrosive

R-phrase(s):
- R5: Heating may cause an explosion.
- R8: Contact with combustible material may cause fire.
- R22: Harmful if swallowed.
- R35: Causes severe burns.

S-phrase(s):
- S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
- S36/37/39: Wear suitable protective clothing, gloves and eye/face protection.
- S45: In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

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

3.2 Mixtures

Synonyms: PCA

Formula: HClO₄

Molecular weight: 100.46 g/mol

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

<table>
<thead>
<tr>
<th>Component</th>
<th>Classification</th>
<th>Concentration</th>
</tr>
</thead>
</table>
Perchloric acid

CAS-No. 7601-90-3 Ox. Liq. 1; Met. Corr. 1; Acute >= 70 - < 90 %
EC-No. 231-512-4 Tox. 4; Skin Corr. 1A; STOT
Index-No. 017-006-00-4 RE 2; H271, H290, H302, H314, H373

Hazardous ingredients according to Directive 1999/45/EC

Component Classification Concentration

Perchloric acid
CAS-No. 7601-90-3 O, C, R 5 - R 8 - R22 - R35 - >= 50 - <= 100 %
EC-No. 231-512-4 R48
Index-No. 017-006-00-4

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
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
Chlorine
Hydrogen chloride gas
Container explosion may occur under fire conditions.

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
Wear respiratory protection. Avoid breathing vapours, mist or gas. Ensure adequate ventilation.
Evacuate personnel to safe 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.
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.
Storage class (TRGS 510): Strongly oxidizing hazardous materials

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
Components with workplace 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**
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. 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: liquid, clear
   Colour: colourless

b) Odour
   No data available

c) Odour Threshold
   No data available

d) pH
   No data available

e) Melting point/freezing point
   -18 °C

f) Initial boiling point and boiling range
   ca.203 °C at 1.013 hPa

g) Flash point
   113 °C - closed cup

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
   9.1 hPa at 25 °C

l) Vapour density
   No data available

m) Relative density
   1,664 g/mL at 25 °C

n) Water solubility
   completely miscible

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
   Not explosive

t) Oxidizing properties
   No data available

9.2 Other safety information
No data available

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
Amines and alcohols cause exothermic reactions.

10.4 Conditions to avoid
No data available
10.5 **Incompatible materials**
Strong bases, Strong acids, Amines, Phosphorus halides, Alcohols, Organic materials, Powdered metals, Strong reducing agents

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 - < 2,000 mg/kg
(OECD Test Guideline 423)

**Skin corrosion/irritation**
Extremely corrosive and destructive to tissue.

**Serious eye damage/eye irritation**
Corrosive

**Respiratory or skin sensitisation**
No data available

**Germ cell mutagenicity**
Ames test
Salmonella typhimurium
Result: negative

**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**
May cause damage to organs through prolonged or repeated exposure. - Thyroid

**Aspiration hazard**
No data available

**Additional Information**
RTECS: Not available
burning sensation, Cough, wheezing, laryngitis, Shortness of breath, spasm, inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema, Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin.

**SECTION 12: Ecological information**

12.1 **Toxicity**
Toxicity to daphnia and other aquatic invertebrates
Immobilization EC50 - Daphnia magna (Water flea) - > 100 mg/l - 48 h
(OECD Test Guideline 202)
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
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
Do not empty into drains. Neutralisation will not reduce ecotoxic effects.

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**
Dispose of as unused product.

SECTION 14: Transport information

14.1 UN number

ADR/RID: 1873
IMDG: 1873
IATA: 1873

14.2 UN proper shipping name

ADR/RID: PERCHLORIC ACID
IMDG: PERCHLORIC ACID
IATA: Perchloric acid
Passenger Aircraft: Not permitted for transport

14.3 Transport hazard class(es)

ADR/RID: 5.1 (8)
IMDG: 5.1 (8)
IATA: 5.1 (8)

14.4 Packaging group

ADR/RID: I
IMDG: I
IATA: I

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

15.2 Chemical Safety Assessment
For this product a chemical safety assessment was not carried out
SECTION 16: Other information

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

Acute Tox.  Acute toxicity
H271    May cause fire or explosion; strong oxidiser.
H290    May be corrosive to metals.
H302    Harmful if swallowed.
H314    Causes severe skin burns and eye damage.
H373    May cause damage to organs through prolonged or repeated exposure.
Met. Corr. Corrosive to metals
Ox. Liq.  Oxidizing liquids
Skin Corr. Skin corrosion
STOT RE Specific target organ toxicity - repeated exposure

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

C    Corrosive
O    Oxidising
R 5    Heating may cause an explosion.
R 8    Contact with combustible material may cause fire.
R22    Harmful if swallowed.
R35    Causes severe burns.
R48    Danger of serious damage to health by prolonged exposure.

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 for additional terms and conditions of sale.