

# Material Safety Data Sheet



PERCHLORIC ACID 20%

VERSION : 05  
REVISION DATE : 14/06/2025  
EFFECTIVE DATE : 16/06/2025

Product Code : 16745

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## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1. Product identifier

Trade name : PERCHLORIC ACID 20%  
Product code : 16745  
Identification of the product : PERCHLORIC ACID 20%  
CAS No : 7601-90-3  
EC Index-No. : 017-006-004  
EC No. : 231-512-4  
Synonyms : Hyperchloric acid 20%, Chloric (VII) acid 20%

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

Identified uses : Laboratory chemicals, Manufacture of substances

### 1.3. Details of the supplier of the safety data sheet

#### Company identification

MOLYCHEM INDIA LLP  
Office: Maker Tower 'E', 41-A2, 4th Floor, Above Maker  
Arcade, Cuffe Parade, Mumbai 400 005 (INDIA)  
Tel: +91 22 4066 8111, 2205 7772 .  
Email : [info@molychem.net](mailto:info@molychem.net)  
Works: Plot No. B/9, Badlapur M.I.D.C.,  
OPP.Shobhavat Textile Co., Kulgaon, Badlapur (E),  
Dist.-Thane-421 503.

### 1.4. Emergency telephone number

Emergency number : +91 22 4066 8111 (10:00am - 6:00 pm)

## 2. Hazards identification

### 2.1. Classification of the substance or mixture

#### Classification according to Regulation (EC) No. 1272/2008 [CLP]

Oxidising Liquids, Category 2 H272  
Corrosive to metals, Category 1 H290  
Acute toxicity (oral), Category 4 H302  
Skin corrosion/irritation, Category 1, Sub-  
Category 1A H314  
Specific target organ toxicity – Repeated  
exposure, Category 2 H373

Full text of H- and EUH-statements: see section 16

#### Adverse physicochemical, human health and environmental effects

May cause fire or explosion; strong oxidiser. May be corrosive to metals. May cause damage to organs

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through prolonged or repeated exposure. Harmful if swallowed. Causes severe skin burns and eye damage.

## 2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]  
Hazard pictograms (CLP)



Signal word (CLP)

GHS05  
: Danger

Hazard statements (CLP)

: H272 - May intensify fire; 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.

Precautionary statements (CLP)

: P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking  
P280 - Wear protective clothing, eye protection, face protection, protective gloves.  
P301+P312 - IF SWALLOWED: Call a POISON CENTRE or doctor if you feel unwell.  
P303+P361+P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water  
P304+P340+P310 - IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or doctor.  
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

## 2.3. Other hazards

Contains no PBT/vPvB substances  $\geq 0.1\%$  assessed in accordance with REACH Annex XIII

## 3. Composition/information on ingredients

### 3.1. Substances

Name : PERCHLORIC ACID 20%

CAS-No : 7601-90-3

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## 3.2. Mixtures

Name	Product identifier	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Perchloric acid	CAS-No.: 7601-90-3	Ox. Liq. 1, H271 Skin Corr. 1A, H314 Eye Dam. 1, H318
Water	CAS-No.: 7732-18-5	Not classified

## 4. First aid measures

### 4.1. Description of first aid measures

First-aid measures general	: Call a physician immediately.
First-aid measures after inhalation	: Remove person to fresh air and keep comfortable for breathing. Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor.
First-aid measures after skin contact	: Take off immediately all contaminated clothing. Wash with plenty of water/.... Immediately call a POISON CENTER/doctor. Rinse skin with water/shower. Call a physician immediately.
First-aid measures after eye contact	: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor. Call a physician immediately
First-aid measures after ingestion	: Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER/doctor. Do not induce vomiting. Call a physician immediately.

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

Symptoms/effects	: Causes severe skin burns and eye damage. May cause damage to organs.
Symptoms/effects after skin contact	: Burns.
Symptoms/effects after eye contact	: Serious damage to eyes.
Symptoms/effects after ingestion	: Harmful if swallowed. Burns.

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

Treat symptomatically.

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## 5. Firefighting measures

### 5.1. Extinguishing media

Suitable extinguishing media : Carbon dioxide. Dry powder. Foam. Water spray.  
Unsuitable extinguishing media : Do not use extinguishing media containing water.

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

Fire hazard : May intensify fire; oxidiser.  
Explosion hazard : May cause fire or explosion; strong oxidiser.  
Hazardous decomposition products in case of fire : Toxic fumes may be released.

### 5.3. Advice for firefighters

Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

## 6. Accidental release measures

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

General measures : Remove ignition sources. No open flames. No smoking.

#### 6.1.1. For non-emergency personnel

Emergency procedures : Ventilate spillage area. Evacuate unnecessary personnel. No open flames, no sparks, and no smoking. Do not breathe dust/fume/gas/mist/vapours/spray. Avoid contact with skin and eyes.

#### 6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. Use personal protective equipment as required. For further information refer to section 8: "Exposure controls/ personal protection"  
Emergency procedures : Ventilate area.

### 6.2. Environmental precautions

Avoid release to the environment.

### 6.3. Methods and material for containment and cleaning up

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Methods for cleaning up : Take up liquid spill into absorbent material. On land, sweep or shovel into suitable containers. Collect spillage. Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Notify authorities if product enters sewers or public waters.

Other information : Dispose of materials or solid residues at an authorized site.

## 6.4. Reference to other sections

For further information refer to section 13.

## 7. Handling and storage

### 7.1. Precautions for safe handling

Precautions for safe handling : Ensure good ventilation of the work station. Take precautionary measures against static discharge. Do not breathe vapours. Avoid contact during pregnancy/while nursing. Keep away from sources of ignition - No smoking. Avoid contact with skin and eyes. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Wear personal protective equipment. Do not breathe dust/fume/gas/mist/vapours/spray.

Hygiene measures : Do not eat, drink or smoke when using this product. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Wash contaminated clothing before reuse. Always wash hands after handling the product.

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

Storage conditions : Keep in fireproof place. Keep container tightly closed. Store in corrosive resistant container with a resistant inner liner. Keep only in original container. Store locked up. Store in a wellventilated place. Keep cool

Storage away from : Heat. Sparks. Open flame. Avoid contact with hot surfaces. No flames, no sparks. Eliminate all sources of ignition.

### 7.3. Specific end use(s)

No additional information available

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## 8. Exposure controls/personal protection

### 8.1. Control parameters

#### 8.1.1. National occupational exposure and biological limit values

No additional information available

#### 8.1.2. Recommended monitoring procedures

No additional information available

#### 8.1.3. Air contaminants formed

No additional information available

#### 8.1.4. DNEL and PNEC

No additional information available

#### 8.1.5. Control banding

No additional information available

### 8.2. Exposure controls

#### 8.2.1. Appropriate engineering controls

Ensure good ventilation of the work station.

#### 8.2.2. Personal protection equipment

Eye protection : Chemical goggles or safety glasses  
Hand protection : Wear protective gloves  
Skin protection : Wear suitable protective clothing  
Respiratory protection : Wear appropriate mask.  
Thermal hazards : No additional information available

#### 8.2.3. Environmental exposure controls

Avoid release to the environment

## 9. Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

Physical state : Liquid  
Appearance : Clear liquid  
Molecular mass : 100.46 g/mol  
Colour : Colourless.  
Odour : Odourless.  
Odour threshold : Not available  
pH : Acidic  
Melting point : Not applicable

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Freezing point	: Not available
Boiling point	: Not available
Flash point	: Not available
Auto-ignition temperature	: Not available
Decomposition temperature	: Not available
Flammability (solid, gas)	: Non flammable.
Vapour pressure	: Not available
Relative vapour density at 20 °C	: Not available
Relative density	: Not available
Density	: 1.12 g/cm <sup>3</sup>
Solubility	: Water: Miscible
Partition coefficient n-octanol/water (Log kow)	: Not available
Viscosity, kinematic	: Not available
Explosive properties	: Not available
Explosive limits	: Not available

## 9.2. Other information

No additional information available

## 10. Stability and reactivity

### 10.1. Reactivity

May cause fire or explosion; strong oxidiser.

### 10.2. Chemical stability

Stable under normal conditions. May form explosive peroxides.

### 10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

### 10.4. Conditions to avoid

Heat. Sparks. Open flame. Avoid contact with hot surfaces. No flames, no sparks. Eliminate all sources of ignition.

### 10.5. Incompatible materials

Strong acids. Strong bases. Combustible materials. metals.

### 10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

## 11. Toxicological information

### 11.1. Information on toxicological effects

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Acute toxicity (oral)	: Harmful if swallowed.
Acute toxicity (dermal)	: Not classified
Acute toxicity (inhalation)	: Not classified
Skin corrosion/irritation	: Causes severe skin burns.
Serious eye damage/irritation	: Assumed to cause serious eye damage
Respiratory or skin sensitisation	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
STOT-single exposure	: Not classified
STOT-repeated exposure	: May cause damage to organs through prolonged or repeated exposure.
Aspiration hazard	: Not classified

## 12. Ecological information

### 12.1. Toxicity

Ecology - general	: Before neutralisation, the product may represent a danger to aquatic organisms.
Hazardous to the aquatic environment, short-term (acute)	: Not classified
Hazardous to the aquatic environment, long-term (chronic)	: Not classified

### 12.2. Persistence and degradability

No additional information available

### 12.3. Bioaccumulative potential

No additional information available

### 12.4. Mobility in soil

No additional information available

### 12.5. Results of PBT and vPvB assessment

No additional information available

### 12.6. Other adverse effects

No additional information available

## 13. Disposal considerations

### 13.1. Waste treatment methods

Waste treatment methods : Dispose of contents/container in accordance with licensed

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Product/Packaging disposal  
recommendations

collector's sorting instructions  
: Dispose of contents/container to hazardous or special  
waste collection point, in accordance with local, regional,  
national and/or international regulation.

## 14. Transport information

In accordance with ADR / IMDG / IATA / ADN / RID

### 14.1. UN number

UN-No. (ADR) : UN 1802  
UN-No. (IMDG) : UN 1802  
UN-No. (IATA) : UN 1802  
UN-No. (ADN) : UN 1802  
UN-No. (RID) : UN 1802

### 14.2. UN proper shipping name

Proper Shipping Name (ADR) : PERCHLORIC ACID  
Proper Shipping Name (IMDG) : PERCHLORIC ACID  
Proper Shipping Name (IATA) : Perchloric acid  
Proper Shipping Name (ADN) : PERCHLORIC ACID  
Proper Shipping Name (RID) : PERCHLORIC ACID  
Transport document description (ADR) : UN 1802 PERCHLORIC ACID, 8 (5.1), II, (E)  
Transport document description (IMDG) : UN 1802 PERCHLORIC ACID, 8 (5.1), II  
Transport document description (IATA) : UN 1802 Perchloric acid, 8 (5.1), II  
Transport document description (ADN) : UN 1802 PERCHLORIC ACID, 8 (5.1), II  
Transport document description (RID) : UN 1802 PERCHLORIC ACID, 8 (5.1), II

### 14.3. Transport hazard class(es)

#### ADR

Transport hazard class(es) (ADR) : 8 (5.1)  
Danger labels (ADR) : 8, 5.1

#### IMDG

Transport hazard class(es) (IMDG) : 8 (5.1)  
Danger labels (IMDG) : 8, 5.1

#### IATA

Transport hazard class(es) (IATA) : 8 (5.1)  
Danger labels (IATA) : 8, 5.1

#### ADN

Transport hazard class(es) (ADN) : 8 (5.1)  
Danger labels (ADN) : 8, 5.1

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## RID

Transport hazard class(es) (RID) : 8 (5.1)  
Danger labels (RID) : 8, 5.1

## 14.4. Packing group

Packing group (ADR) : II  
Packing group (IMDG) : II  
Packing group (IATA) : II  
Packing group (ADN) : II  
Packing group (RID) : II

## 14.5. Environmental hazards

Dangerous for the environment : No  
Marine pollutant : No  
Other information : No supplementary information available

## 14.6. Special precautions for user

### Overland transport

Classification code (ADR) : OC1  
Limited quantities (ADR) : 11  
Excepted quantities (ADR) : E0  
Packing instructions (ADR) : P001, IBC02  
Mixed packing provisions (ADR) : MP3  
Portable tank and bulk container instructions (ADR) : T7  
Portable tank and bulk container special provisions (ADR) : TP2  
Tank code (ADR) : L4BN  
Vehicle for tank carriage : AT  
Transport category (ADR) : 2 1  
Special provisions for carriage - Operation (ADR) : S20  
Hazard identification number (Kemler No.) : 85  
Tunnel restriction code (ADR) : E  
EAC code : 2P

### Transport by sea

Limited quantities (IMDG) : 1 L  
Excepted quantities (IMDG) : E0  
Packing instructions (IMDG) : P001  
Tank instructions (IMDG) : T7  
Tank special provisions (IMDG) : TP2  
EmS-No. (Fire) : F-H  
EmS-No. (Spillage) : S-Q

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Stowage category (IMDG) : D  
MFAG-No : 140

### Air transport

PCA Excepted quantities (IATA) : E0  
PCA Limited quantities (IATA) : Forbidden  
PCA limited quantity max net quantity (IATA) : Forbidden  
PCA packing instructions (IATA) : Forbidden  
PCA max net quantity (IATA) : Forbidden  
CAO packing instructions (IATA) : 855  
CAO max net quantity (IATA) : 30L  
ERG code (IATA) : 8X

### Inland waterway transport

Classification code (ADN) : CO1  
Limited quantities (ADN) : 1 L  
Excepted quantities (ADN) : E0  
Equipment required (ADN) : PP, EP  
Number of blue cones/lights (ADN) : 0

### Rail transport

Classification code (RID) : CO1  
Limited quantities (RID) : 1L  
Excepted quantities (RID) : E0  
Packing instructions (RID) : P001, IBC02  
Mixed packing provisions (RID) : MP3  
Portable tank and bulk container instructions (RID) : T7  
Portable tank and bulk container special provisions (RID) : TP2  
Tank codes for RID tanks (RID) : L4BN  
Transport category (RID) : 2  
Hazard identification number (RID) : 85

## 14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable

## 15. Regulatory information

### 15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

#### 15.1.1 EU-Regulations

##### EU restriction list (REACH Annex XVII)

Reference code Applicable on

Reference code Applicable on

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3(a)	PERCHLORIC ACID 20%
3(b)	PERCHLORIC ACID 20%

Contains no substance(s) listed on REACH Annex XIV (Authorisation List)

Contains no substance(s) listed on the REACH Candidate List

Contains no substance(s) listed on the PIC list (Regulation EU 649/2012 concerning the export and import of hazardous chemicals)

Contains no substance(s) listed on the POP list (Regulation EU 2019/1021 on persistent organic pollutants)

Contains no substance(s) listed on the Ozone Depletion list (Regulation EU 1005/2009 on substances that deplete the ozone layer)

Contains no substance(s) listed on the Explosives Precursors list (Regulation EU 2019/1148 on the marketing and use of explosives precursors)

Contains no substance(s) listed on the Drug Precursors list (Regulation EC 273/2004 on the manufacture and the placing on market of certain substances used in the illicit manufacture of narcotic drugs and psychotropic substances)

## 15.1.2. National regulations

### Germany

Water hazard class (WGK) : WGK 1, Slightly hazardous to water (Classification according to AwSV, Annex 1).  
Hazardous Incident Ordinance (12. BImSchV) : Is not subject of the Hazardous Incident Ordinance (12. BImSchV)

### Netherlands

SZW-lijst van kankerverwekkende stoffen : None of the components are listed  
SZW-lijst van mutagene stoffen : None of the components are listed  
SZW-lijst van reprotoxische stoffen – Borstvoeding : None of the components are listed  
SZW-lijst van reprotoxische stoffen – Vruchtbaarheid : None of the components are listed  
SZW-lijst van reprotoxische stoffen – Ontwikkeling : None of the components are listed

### Denmark

Danish National Regulations : Young people below the age of 18 years are not allowed to use the product Pregnant/breastfeeding women working with the product must not be in direct contact with the product

## 15.2. Chemical safety assessment

No chemical safety assessment has been carried out

### MOLYCHEM INDIA LLP

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Works : Unit I - Plot No. B/9, Unit II - Plot No. B/11, Badlapur M.I.D.C., Opp. Shobhavat Textile Co., Kulgaon, Badlapur (E), Dist.-Thane-421 503.

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PERCHLORIC ACID 20%

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## 16. Other information

### Abbreviations and acronyms

ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE	Acute Toxicity Estimate
BCF	Bioconcentration factor
BLV	Biological limit value
BOD	Biochemical oxygen demand
COD	Chemical oxygen demand
COD	Chemical oxygen demand
DMEL	Derived Minimal Effect level
DNEL	Derived-No Effect Level
EC-No.	European Community number
EC50	Median effective concentration
EN	European Standard
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
LC50	Median lethal concentration
LD50	Median lethal dose
LOAEL	Lowest Observed Adverse Effect Level
NOAEC	No-Observed Adverse Effect Concentration
NOAEL	No-Observed Adverse Effect Level
NOEC	No-Observed Effect Concentration
OECD	Organisation for Economic Co-operation and Development
OEL	Occupational Exposure Limit
PBT	Persistent Bioaccumulative Toxic
PNEC	Predicted No-Effect Concentration
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
SDS	Safety Data Sheet
STP	Sewage treatment plant
ThOD	Theoretical oxygen demand (ThOD)
TLM	Median Tolerance Limit
VOC	Volatile Organic Compounds
CAS-No.	Chemical Abstract Service number
N.O.S.	Not Otherwise Specified

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vPvB	Very Persistent and Very Bioaccumulative
ED	Endocrine disrupting properties
<b>Full text of H- and EUH-statements</b>	
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
Flam. Liq. 2	Flammable liquids, Category 2
STOT SE 3	Specific target organ toxicity — Single exposure, Category 3, Narcosis
H225	Highly flammable liquid and vapour.
H319	Causes serious eye irritation.
H336	May cause drowsiness or dizziness.
EUH066	Repeated exposure may cause skin dryness or cracking.

Safety Data Sheet (SDS), EU This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

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