

### MATERIAL SAFETY DATA SHEET (MSDS)

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

##### 1.1. Product identifier

Product form : Mixture  
:  
EC Index-No. : 017-006-00-4  
EC-No. : 231-512-4  
CAS-No. : 7601-90-3  
Product code : 0241E  
Formula : HClO<sub>4</sub>

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

###### 1.2.1. Relevant identified uses

Industrial/Professional use spec : Industrial  
For professional use only

###### 1.2.2. Uses advised against

No additional information available

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

SPAN LAB  
UNIT NO. 14, SKY INDUSTRIAL ESTATE, WALIV, VASAI (E)  
401208 Mumbai - INDIA  
PH: +91 9820509929  
[info@spanlab.in](mailto:info@spanlab.in) [www.spanlab.in](http://www.spanlab.in)

#### SECTION 2: Hazards identification

##### 2.1. Classification of the substance or mixture

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

Oxidising Liquids, H271  
Category 1  
Corrosive to metals, H290  
Category 1  
Acute toxicity (oral), H302  
Category 4  
Skin corrosion/irritation, H314  
Category 1A  
Specific target organ H373  
toxicity — Repeated  
exposure, Category 2

Full text of H statements : see section 16

# PERCHLORIC ACID 70% AR/ACS

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### Adverse physicochemical, human health and environmental effects

No additional information available

## 2.2. Label elements

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

Hazard pictograms (CLP) :



GHS03

GHS05

GHS07

GHS08

Signal word (CLP) : Danger

Hazard statements (CLP) : 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.

Precautionary statements (CLP) : P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
P260 - Do not breathe dust/fume/gas/mist/vapours/spray.  
P280 - Wear protective clothing, face protection, eye protection, protective gloves.  
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 ... to extinguish.  
P371+P380+P375 - In case of major fire and large quantities: Evacuate area. Fight fire remotely due to the risk of explosion.

## 2.3. Other hazards

No additional information available

## SECTION 3: Composition/information on ingredients

### 3.1. Substances

Not applicable

### 3.2. Mixtures

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Perchloric acid	(CAS-No.) 7601-90-3 (EC-No.) 231-512-4 (EC Index-No.) 017-006-00-4	70	Ox. Liq. 1, H271 Skin Corr. 1A, H314 Eye Dam. 1, H318

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ACETIC ACID GLACIAL AR	(CAS-No.) 64-19-7 (EC-No.) 200-580-7 (EC Index-No.) 607-002-00-6	30	Flam. Liq. 3, H226 Acute Tox. 4 (Inhalation), H332 Skin Corr. 1A, H314 Eye Dam. 1, H318
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Full text of H-statements: see section 16

### SECTION 4: First aid measures

#### 4.1. Description of first aid measures

- First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor.
- First-aid measures after skin contact : Rinse immediately contaminated clothing and skin with plenty of water before removing clothes. Wash with plenty of water/.... Immediately call a POISON CENTER/doctor.
- 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.
- First-aid measures after ingestion : Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER/doctor.

#### 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 through prolonged or repeated exposure.
- Symptoms/effects after ingestion : Harmful if swallowed.

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

Treat symptomatically.

### SECTION 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 cause fire or explosion; strong oxidiser.
- Explosion hazard : Heat may build pressure, rupturing closed containers, spreading fire and increasing risk of burns and injuries.

#### 5.3. Advice for firefighters

- Firefighting instructions : In case of major fire and large quantities: Evacuate area. Fight fire remotely due to the risk of explosion.

### SECTION 6: Accidental release measures

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

- General measures : No open flames. No smoking.

##### 6.1.1. For non-emergency personnel

- Emergency procedures : Evacuate unnecessary personnel.

##### 6.1.2. For emergency responders

- Protective equipment : Use personal protective equipment as required.
- Emergency procedures : Ventilate area.

#### 6.2. Environmental precautions

Avoid release to the environment.

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

Methods for cleaning up : On land, sweep or shovel into suitable containers. Collect spillage.

### 6.4. Reference to other sections

No additional information available

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

Additional hazards when processed : Hazardous waste due to potential risk of explosion. May be corrosive to metals.

Precautions for safe handling : Do not breathe vapours. Avoid contact with skin and eyes. Avoid contact during pregnancy/while nursing. Keep away from sources of ignition - No smoking.

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.

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

Technical measures : Proper grounding procedures to avoid static electricity should be followed. Comply with applicable regulations.

Storage conditions : Keep in fireproof place. Keep container tightly closed.

Incompatible materials : Heat sources. combustible materials.

### 7.3. Specific end use(s)

No additional information available

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

No additional information available

### 8.2. Exposure controls

Personal protective equipment : Wear fire/flammable resistant/retardant clothing.

Hand protection : Protective gloves

Eye protection : Chemical goggles or face shield

Skin and body protection : Wear suitable protective clothing

Respiratory protection : Wear respiratory protection.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Physical state : Liquid

Molecular mass : 100.46 g/mol

Colour : Clear Colorless.

Odour : odourless.

Odour threshold : No data available

pH : No data available

Relative evaporation rate (butylacetate=1) : No data available

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Melting point	: -18 °C
Freezing point	: No data available
Boiling point	: 203 °C
Flash point	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: No data available
Vapour pressure	: 9 hPa at 20 °C
Relative vapour density at 20 °C	: 3.5
Relative density	: No data available
Density	: 1.664 at 25°C
Solubility	: Water: Infinitely soluble
Log Pow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: Heating may cause an explosion.
Oxidising properties	: The substance or mixture is classified as oxidizing with the subcategory 1. May cause fire or explosion; strong oxidiser.
Explosive limits	: No data available

### 9.2. Other information

No additional information available

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

Thermal decomposition generates : Corrosive vapours.

### 10.2. Chemical stability

May cause fire or explosion; strong oxidiser.

### 10.3. Possibility of hazardous reactions

No additional information available

### 10.4. Conditions to avoid

Heat. Sparks. Open flame.

### 10.5. Incompatible materials

No additional information available

### 10.6. Hazardous decomposition products

Thermal decomposition generates : Corrosive vapours.

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### SECTION 11: Toxicological information

#### 11.1. Information on toxicological effects

Acute toxicity : Harmful if swallowed.

ATE CLP (oral)	500 mg/kg bodyweight
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Skin corrosion/irritation : Causes severe skin burns and eye damage.

Serious eye damage/irritation : Serious eye damage, category 1, implicit

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

### SECTION 12: Ecological information

#### 12.1. Toxicity

No additional information available

#### 12.2. Persistence and degradability

##### ACETIC ACID GLACIAL AR (64-19-7)

Persistence and degradability	Not established.
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#### 12.3. Bioaccumulative potential

##### ACETIC ACID GLACIAL AR (64-19-7)

Log Pow	0.17
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Bioaccumulative potential	Not established.
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#### 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

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### SECTION 13: Disposal considerations

#### 13.1. Waste treatment methods

Product/Packaging disposal recommendations	: Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.
Additional information	: Hazardous waste due to potential risk of explosion.

### SECTION 14: Transport information

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

#### 14.1. UN number

UN-No. (ADR)	: 1873
UN-No. (IMDG)	: 1873
UN-No. (IATA)	: 1873
UN-No. (ADN)	: 1873
UN-No. (RID)	: 1873

#### 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 1873 PERCHLORIC ACID, 5.1 (8), I, (B/E)
Transport document description (IMDG)	: UN 1873 PERCHLORIC ACID, 5.1 (8), I
Transport document description (IATA)	: UN 1873 Perchloric acid, 5.1, I
Transport document description (ADN)	: UN 1873 PERCHLORIC ACID, 5.1 (8), I
Transport document description (RID)	: UN 1873 PERCHLORIC ACID, 5.1 (8), I

#### 14.3. Transport hazard class(es)

##### ADR

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



##### IMDG

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



##### IATA

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

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### ADN

Transport hazard class(es) (ADN) : 5.1 (8)

Danger labels (ADN) : 5.1, 8



### RID

Transport hazard class(es) (RID) : 5.1 (8)

Danger labels (RID) : 5.1, 8



### 14.4. Packing group

Packing group (ADR) : I

Packing group (IMDG) : I

Packing group (IATA) : I

Packing group (ADN) : I

Packing group (RID) : I

### 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

Special provisions (ADR) : 60

Limited quantities (ADR) : 0

Excepted quantities (ADR) : E0

Packing instructions (ADR) : P502

Special packing provisions (ADR) : PP28

Mixed packing provisions (ADR) : MP3

Portable tank and bulk container instructions (ADR) : T10

Portable tank and bulk container special provisions (ADR) : TP1

Tank code (ADR) : L4DN(+)

Tank special provisions (ADR) : TU3, TU28

Vehicle for tank carriage : AT

Transport category (ADR) : 1



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Special provisions for carriage - Loading, unloading and handling (ADR) : CV24

Special provisions for carriage - Operation (ADR) : S20

Hazard identification number (Kemler No.) : 558

Orange plates :



Tunnel restriction code (ADR) : B/E

EAC code : 2P

### - Transport by sea

Special provisions (IMDG) : 900

Packing instructions (IMDG) : P502

Special packing provisions (IMDG) : PP28

Tank instructions (IMDG) : T10

Tank special provisions (IMDG) : TP1

EmS-No. (Fire) : F-A

EmS-No. (Spillage) : S-Q

Stowage category (IMDG) : D

Segregation (IMDG) : SG16

Properties and observations (IMDG) : Colourless liquid. Mixtures with combustible material may ignite spontaneously and, when involved in a fire, by shock or by friction, may cause an explosion. Highly corrosive to most metals. Causes burns to skin, eyes and mucous membranes. Transport of PERCHLORIC ACID with more than 72% acid, by mass is prohibited.

MFAG-No : 143

### - 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) : 553

CAO max net quantity (IATA) : 2.5L

ERG code (IATA) : 5C

### - Inland waterway transport

Classification code (ADN) : OC1

Special provisions (ADN) : 60

Limited quantities (ADN) : 0

Excepted quantities (ADN) : E0

Equipment required (ADN) : PP, EP

Number of blue cones/lights (ADN) : 0

### - Rail transport

Classification code (RID) : OC1

Special provisions (RID) : 60

Limited quantities (RID) : 0

Excepted quantities (RID) : E0

Packing instructions (RID) : P502

Special packing provisions (RID) : PP28

Mixed packing provisions (RID) : MP3

Portable tank and bulk container instructions (RID) : T10

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Portable tank and bulk container special provisions (RID)	: TP1
Tank codes for RID tanks (RID)	: L4DN(+)
Special provisions for RID tanks (RID)	: TU3, TU28, TE16
Transport category (RID)	: 1
Special provisions for carriage - Loading, unloading and handling (RID)	: CW24
Hazard identification number (RID)	: 558

### 14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

## SECTION 15: Regulatory information

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

#### 15.1.1. EU-Regulations

Contains no REACH substances with Annex XVII restrictions

Contains no substance on the REACH candidate list

Contains no REACH Annex XIV substances

#### 15.1.2. National regulations

##### Germany

Reference to AwSV : Water hazard class (WGK) 1, Slightly hazardous to water (Classification according to AwSV, Annex 1)

12th Ordinance Implementing the Federal Immission Control Act - 12.BImSchV : Is not subject of the 12. BImSchV (Hazardous Incident Ordinance)

##### Netherlands

SZW-lijst van kankerverwekkende stoffen : None of the components are listed

SZW-lijst van mutagene stoffen : None of the components are listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Borstvoeding : None of the components are listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Vruchtbaarheid : None of the components are listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Ontwikkeling : None of the components are listed

##### Denmark

Recommendations Danish Regulation : 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 additional information available

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### SECTION 16: Other information

Full text of H- and EUH-statements:

Acute Tox. 4 (Inhalation)	Acute toxicity (inhal.), Category 4
Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4
Eye Dam. 1	Serious eye damage/eye irritation, Category 1
Flam. Liq. 3	Flammable liquids, Category 3
Met. Corr. 1	Corrosive to metals, Category 1
Ox. Liq. 1	Oxidising Liquids, Category 1
Skin Corr. 1A	Skin corrosion/irritation, Category 1A
STOT RE 2	Specific target organ toxicity — Repeated exposure, Category 2
H226	Flammable liquid and vapour.
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.
H318	Causes serious eye damage.
H332	Harmful if inhaled.
H373	May cause damage to organs through prolonged or repeated exposure.

*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.*