

**PERCHLORIC ACID 0.1M (0.1N)  
STANDARDIZED SOLUTION TRACEABLE TO  
NIST MSDS**

**CAS-No.: MSDS**

**MATERIAL SAFETY DATA SHEET (MSDS)**

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

**1.1. Product identifier**

Product form : Mixture  
:  
Product code : R230A  
Chemical structure :



**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  
Use of the substance/mixture : Laboratory chemicals

**1.2.2. Uses advised against**

No additional information available

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

LOBA CHEMIE PVT.LTD.  
107 Wode House Road, Jehangir Villa, Colaba  
400005 Mumbai - INDIA  
T +91 22 6663 6663 - F +91 22 6663 6699  
[info@lobachemie.com](mailto:info@lobachemie.com) - [www.lobachemie.com](http://www.lobachemie.com)

**1.4. Emergency telephone number**

Emergency number : + 91 22 6663 6663 (9:00am - 6:00 pm)

**SECTION 2: Hazards identification**

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

**Classification according to Directive 67/548/EEC [DSD] or 1999/45/EC [DPD]**

Xi; R36/38

Full text of R-phrases: see section 16

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

No additional information available

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#### 2.2. Label elements

##### Labelling according to Directive 67/548/EEC or 1999/45/EC

Hazard symbols :



Xi - Irritant

R-phrases :

R36/38 - Irritating to eyes and skin

S-phrases :

S24 - Avoid contact with skin  
S26 - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice  
S35 - This material and its container must be disposed of in a safe way  
S36/37 - Wear suitable protective clothing and gloves  
S51 - Use only in well-ventilated areas  
S59 - Refer to manufacturer/supplier for information on recovery/recycling

#### 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 Directive 67/548/EEC	Classification according to Regulation (EC) No. 1272/2008 [CLP]
ACETIC ACID GLACIAL Extra Pure	(CAS-No.) 64-19-7 (EC-No.) 200-580-7 (EC Index-No.) 607-002-00-6	99 - 99.5	C; R35 R10	Flam. Liq. 3, H226 Skin Corr. 1, H314
Perchloric acid	(CAS-No.) 7601-90-3 (EC-No.) 231-512-4 (EC Index-No.) 017-006-00-4	1 - 5	O; R8 C; R35 R5	Ox. Liq. 1, H271 Skin Corr. 1A, H314 Eye Dam. 1, H318

Full text of R- and 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. Give oxygen or artificial respiration if necessary. If you feel unwell, seek medical advice.

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First-aid measures after skin contact	: Gently wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention.
First-aid measures after eye contact	: Remove contact lenses, if present and easy to do. Continue rinsing. Rinse cautiously with water for several minutes. If eye irritation persists: Get medical advice/attention.
First-aid measures after ingestion	: Rinse mouth out with water. If you feel unwell, seek medical advice.

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

Symptoms/effects after skin contact	: Causes skin irritation.
Symptoms/effects after eye contact	: Causes serious eye irritation.

#### 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	: dry chemical powder, alcohol-resistant foam, carbon dioxide (CO <sub>2</sub> ).
Unsuitable extinguishing media	: Do not use a heavy water stream.

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

Fire hazard	: Flammable liquid and vapour.
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#### 5.3. Advice for firefighters

Protection during firefighting	: Do not attempt to take action without suitable protective equipment.
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### SECTION 6: Accidental release measures

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

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

Emergency procedures	: Evacuate unnecessary personnel.
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##### 6.1.2. For emergency responders

Protective equipment	: Use personal protective equipment as required.
Emergency procedures	: Stop release.

#### 6.2. Environmental precautions

Avoid release to the environment.

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

Methods for cleaning up	: Collect spillage. On land, sweep or shovel into suitable containers. Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible.
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#### 6.4. Reference to other sections

No additional information available

### SECTION 7: Handling and storage

#### 7.1. Precautions for safe handling

Precautions for safe handling	: Do not get in eyes, on skin, or on clothing.
Hygiene measures	: 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

Storage conditions	: Store in original container. Keep container tightly closed. Store in a well-ventilated place. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
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#### 7.3. Specific end use(s)

No additional information available

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#### SECTION 8: Exposure controls/personal protection

##### 8.1. Control parameters

No additional information available

##### 8.2. Exposure controls

Hand protection	: protective gloves
Eye protection	: Chemical goggles or safety glasses
Skin and body protection	: Wear fire/flame resistant/retardant clothing.
Respiratory protection	: Wear appropriate mask

#### SECTION 9: Physical and chemical properties

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

Physical state	: Liquid
Colour	: Clear Colorless.
Odour	: No data available
Odour threshold	: No data available
pH	: No data available
Relative evaporation rate (butylacetate=1)	: No data available
Melting point	: No data available
Freezing point	: No data available
Boiling point	: No data available
Flash point	: 40 °C
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: No data available
Vapour pressure	: No data available
Relative vapour density at 20 °C	: No data available
Relative density	: No data available
Density	: 1.054 g/cm <sup>3</sup>
Solubility	: No data available
Log Pow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available

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Explosive properties : No data available

Oxidising properties : No data available

Explosive limits : No data available

#### 9.2. Other information

No additional information available

### SECTION 10: Stability and reactivity

#### 10.1. Reactivity

No additional information available

#### 10.2. Chemical stability

Flammable liquid and vapour.

#### 10.3. Possibility of hazardous reactions

No additional information available

#### 10.4. Conditions to avoid

Direct sunlight. Overheating. Open flame. Heat. Sparks.

#### 10.5. Incompatible materials

No additional information available

#### 10.6. Hazardous decomposition products

No additional information available

### SECTION 11: Toxicological information

#### 11.1. Information on toxicological effects

Acute toxicity : Not classified

Irritation : Irritating to eyes and skin.

Corrosivity : Not classified

Sensitisation : Not classified

Repeated dose toxicity : Not classified

Carcinogenicity : Not classified

Mutagenicity : Not classified

Toxicity for reproduction : Not classified

### SECTION 12: Ecological information

#### 12.1. Toxicity

No additional information available

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#### 12.2. Persistence and degradability

No additional information available

#### 12.3. Bioaccumulative potential

##### ACETIC ACID GLACIAL Extra Pure (64-19-7)

Log Pow	0.17
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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

### SECTION 13: Disposal considerations

#### 13.1. Waste treatment methods

No additional information available

### SECTION 14: Transport information

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

#### 14.1. UN number

UN-No. (ADR)	: 2789
UN-No. (IMDG)	: 2789
UN-No. (IATA)	: 2789
UN-No. (ADN)	: 2789
UN-No. (RID)	: 2789

#### 14.2. UN proper shipping name

Proper Shipping Name (ADR)	: ACETIC ACID SOLUTION
Proper Shipping Name (IMDG)	: ACETIC ACID, GLACIAL
Proper Shipping Name (IATA)	: Acetic acid, glacial
Proper Shipping Name (ADN)	: ACETIC ACID, GLACIAL
Proper Shipping Name (RID)	: ACETIC ACID, GLACIAL
Transport document description (ADR)	: UN 2789 ACETIC ACID SOLUTION, 8 (3), II, (D/E)
Transport document description (IMDG)	: UN 2789 ACETIC ACID, GLACIAL, 8 (3), II
Transport document description (IATA)	: UN 2789 Acetic acid, glacial, 8 (3), II
Transport document description (ADN)	: UN 2789 ACETIC ACID, GLACIAL, 8 (3), II
Transport document description (RID)	: UN 2789 ACETIC ACID, GLACIAL, 8 (3), II

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

##### ADR

Transport hazard class(es) (ADR)	: 8 (3)
Danger labels (ADR)	: 8, 3

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#### IMDG

Transport hazard class(es) (IMDG) : 8 (3)

Danger labels (IMDG) : 8, 3



#### IATA

Transport hazard class(es) (IATA) : 8 (3)

Hazard labels (IATA) : 8, 3



#### ADN

Transport hazard class(es) (ADN) : 8 (3)

Danger labels (ADN) : 8, 3



#### RID

Transport hazard class(es) (RID) : 8 (3)

Danger labels (RID) : 8, 3



#### 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

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#### 14.6. Special precautions for user

##### - Overland transport

Classification code (ADR)	: CF1
Limited quantities (ADR)	: 1I
Excepted quantities (ADR)	: E2
Packing instructions (ADR)	: P001, IBC02
Mixed packing provisions (ADR)	: MP15
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	: FL
Transport category (ADR)	: 2
Special provisions for carriage - Operation (ADR)	: S2
Hazard identification number (Kemler No.)	: 83
Orange plates	:



Tunnel restriction code (ADR)	: D/E
EAC code	: •2P
APP code	: A(fl)

##### - Transport by sea

Packing instructions (IMDG)	: P001
IBC packing instructions (IMDG)	: IBC02
Tank instructions (IMDG)	: T7
Tank special provisions (IMDG)	: TP2
EmS-No. (Fire)	: F-E
EmS-No. (Spillage)	: S-C
Stowage category (IMDG)	: A
Properties and observations (IMDG)	: Colourless flammable liquid with a pungent odour. When pure, crystallizes below 16°C. Flashpoint: 40°C c.c. (pure product) 60°C c.c. (80% solution) Explosive limits: 4% to 17% Miscible with water. Corrosive to lead and most other metals. Corrosive to skin, eyes and mucous membranes.
MFAG-No	: 132

##### - Air transport

PCA Excepted quantities (IATA)	: E2
PCA Limited quantities (IATA)	: Y840
PCA limited quantity max net quantity (IATA)	: 0.5L
PCA packing instructions (IATA)	: 851
PCA max net quantity (IATA)	: 1L
CAO packing instructions (IATA)	: 855
CAO max net quantity (IATA)	: 30L
ERG code (IATA)	: 8F

##### - Inland waterway transport

Classification code (ADN)	: CF1
Limited quantities (ADN)	: 1 L



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Excepted quantities (ADN)	: E2
Carriage permitted (ADN)	: T
Equipment required (ADN)	: PP, EP, EX, A
Ventilation (ADN)	: VE01
Number of blue cones/lights (ADN)	: 1

#### - Rail transport

Classification code (RID)	: CF1
Limited quantities (RID)	: 1L
Excepted quantities (RID)	: E2
Packing instructions (RID)	: P001, IBC02
Mixed packing provisions (RID)	: MP15
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
Colis express (express parcels) (RID)	: CE6
Hazard identification number (RID)	: 83

#### 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, low hazard 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

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

#### Denmark

Class for fire hazard : Class II-1  
Store unit : 5 liter  
Classification remarks : R10 <H226;H315;H319>; Emergency management guidelines for the storage of flammable liquids must be followed

#### 15.2. Chemical safety assessment

No additional information available

#### SECTION 16: Other information

Full text of R-, H- and EUH-statements:

Eye Dam. 1	Serious eye damage/eye irritation, Category 1
Flam. Liq. 3	Flammable liquids, Category 3
Ox. Liq. 1	Oxidising Liquids, Category 1
Skin Corr. 1	Skin corrosion/irritation, Category 1
Skin Corr. 1A	Skin corrosion/irritation, Category 1A
H226	Flammable liquid and vapour.
H271	May cause fire or explosion; strong oxidiser.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
R10	Flammable
R35	Causes severe burns
R36/38	Irritating to eyes and skin
R5	Heating may cause an explosion
R8	Contact with combustible material may cause fire
C	Corrosive
O	Oxidising
Xi	Irritant

*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*