

SAFETY DATA SHEET

according to Occupational Safety And Health
(Classification, Labelling And Safety Data Sheet Of
Hazardous Chemicals) Regulations 2013 (CLASS 2013)

Revision Date 30.08.2019

Version 1.4

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

1.1 Product identifier

| | |
|---------------------------|---|
| Catalogue No. | 101084 |
| Product name | Aluminium chloride hexahydrate EMPROVE® ESSENTIAL Ph Eur,BP,USP |
| REACH Registration Number | 01-2119459371-39-XXXX |
| CAS-No. | 7784-13-6 |

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

| | |
|-----------------|---|
| Identified uses | Pharmaceutical production, Cosmetic raw material For additional information on uses please refer to the Merck Chemicals portal (www.merckgroup.com). |
|-----------------|---|

1.3 Details of the supplier of the safety data sheet

| | |
|-------------------------|---|
| Company | Merck KGaA * 64271 Darmstadt *Germany* Telefon:+49 6151 72-0 |
| Responsible Department | LS-QHC * e-mail: prodsafe@merckgroup.com |
| Regional representation | Merck Sdn. Bhd. (Co. No: 178145), No. 4, Jalan U1/26, Section U1, Hicom Glenmarie Industrial Park, 40150 Shah Alam, Selangor. Tel: 03-74943688 Fax: 03-74910850 |

1.4 Emergency telephone Customer Call Centre: + 62 0800 140 1253 (Toll Free) number

SECTION 2. Hazards identification

2.1 Classification of the substance or mixture Classification according to CLASS regulations 2013

Skin corrosion, Category 1B, H314

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

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2.2 Label elements

Labelling according to CLASS regulations 2013

Hazard pictograms



Signal word

Danger

Hazard statements

H314 Causes severe skin burns and eye damage.

Precautionary statements

Prevention

P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response

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.

CAS-No. 7784-13-6

2.3 Other hazards

None known.

SECTION 3. Composition/information on ingredients

3.1 Substance

Formula AlCl₃ * 6 H₂O (Hill)

EC-No. 231-208-1

Molar mass 241.43 g/mol

Hazardous components according to CLASS regulations 2013

Chemical name (Concentration)

| CAS-No. | Registration number | Classification |
|---|---------------------|----------------|
| aluminum chloride hexahydrate (>= 80 % - <= 100 %) | | |

Substance does not meet the criteria for PBT or vPvB according to Regulation (EC) No 1907/2006, Annex XIII.

| | | |
|-----------|----------------|-----------------------------------|
| 7784-13-6 | 01-2119459371- | |
| | 39-XXXX | Skin corrosion, Category 1B, H314 |
| | | Skin corrosion, Category 1B, H314 |

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

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3.2 Mixture

Not applicable

SECTION 4. First aid measures

4.1 Description of first aid measures

General advice

First aider needs to protect himself.

After inhalation: 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.

After eye contact: rinse out with plenty of water. Immediately call in ophthalmologist. Remove contact lenses.

After swallowing: 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

Nausea, Vomiting

The following applies to aluminium compounds in general: After swallowing: only slightly absorbable via the gastrointestinal tract. Serious disorders in man (from about 4000 mg aluminium up): phosphate metabolism, calcium metabolism.

Irritation and corrosion, Cough, Shortness of breath

Risk of blindness!

4.3 Indication of any immediate medical attention and special treatment needed

No information available.

SECTION 5. Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media

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

5.2 Special hazards arising from the substance or mixture

Not combustible.

Ambient fire may liberate hazardous vapours.

Fire may cause evolution of:

Hydrogen chloride gas

5.3 Advice for firefighters

Special protective equipment 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.

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Further information

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

SECTION 6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Avoid inhalation of dusts. Avoid substance contact. 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.

6.3 Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up dry. Dispose of properly. Clean up affected area. Avoid generation of dusts.

6.4 Reference to other sections

Indications about waste treatment see section 13.

SECTION 7. Handling and storage

7.1 Precautions for safe handling

Advice on safe handling

Observe label precautions.

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

Tightly closed. Dry.

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

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aluminum chloride hexahydrate (7784-13-6)
MY OEL Time Weighted 2 mg/m³ Expressed as: as Al
Average (TWA):

8.2 Exposure controls

Engineering measures

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

See section 7.1.

Individual protection measures

Protective clothing needs to be selected specifically for the workplace, depending on concentrations and quantities of the hazardous substances handled. The chemical resistance of the protective equipment should be enquired at the respective supplier.

Eye/face protection

Tightly fitting safety goggles

Hand protection

full contact:

Glove material: Nitrile rubber
Glove thickness: 0.11 mm
Break through time: > 480 min

splash contact:

Glove material: Nitrile rubber
Glove thickness: 0.11 mm
Break through time: > 480 min

The protective gloves to be used must comply with the specifications of EC Directive 89/686/EEC and the related standard EN374, for example KCL 741 Dermatril® L (full contact), KCL 741 Dermatril® L (splash contact).

The breakthrough times stated above were determined by KCL in laboratory tests acc. to EN374 with samples of the recommended glove types.

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

Other protective equipment

Acid-resistant protective clothing

Respiratory protection

required when dusts are generated.

Recommended Filter type: Filter P 2 (acc. to DIN 3181) for solid and liquid particles of harmful substances

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer.

These measures have to be properly documented.

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Environmental exposure controls

Do not let product enter drains.

SECTION 9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

| | |
|--|---------------------------------------|
| Form | solid |
| Colour | colourless |
| Odour | odourless |
| Odour Threshold | Not applicable |
| pH | ca. 2.5 at 50 g/l 20 °C |
| Melting point | ca. 100 °C |
| Boiling point | No information available. |
| Flash point | Not applicable |
| Evaporation rate | No information available. |
| Flammability (solid, gas) | The product is not flammable. |
| Lower explosion limit | Not applicable |
| Upper explosion limit | Not applicable |
| Vapour pressure | No information available. |
| Relative vapour density | No information available. |
| Density | ca.2.40 g/cm ³ at 20 °C |
| Relative density | No information available. |
| Water solubility | 1,330 g/l at 20 °C |
| Partition coefficient: n-octanol/water | No information available. |
| Auto-ignition temperature | Not applicable |

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| | |
|---------------------------|------------------------------|
| Decomposition temperature | No information available. |
| Viscosity, dynamic | No information available. |
| Explosive properties | Not classified as explosive. |
| Oxidizing properties | none |

9.2 Other data

| | |
|----------------------|--------------------------|
| Ignition temperature | Not applicable |
| Bulk density | ca.800 kg/m ³ |

SECTION 10. Stability and reactivity

10.1 Reactivity

See section 10.3

10.2 Chemical stability

The product is chemically stable under standard ambient conditions (room temperature) .

10.3 Possibility of hazardous reactions

Violent reactions possible with:

alkenes, Alcohols, Alkali metals, Alkaline earth metals, Ethylene oxide, halogen oxides, Oxidizing agents, organic nitro compounds, phenols, Bases

10.4 Conditions to avoid

Strong heating (decomposition).

10.5 Incompatible materials

Metals

10.6 Hazardous decomposition products

in the event of fire: See section 5.

SECTION 11. Toxicological information

11.1 Information on toxicological effects

Acute oral toxicity

LD50 Rat: 3,450 mg/kg

(RTECS) The value is given in analogy to the following substances: aluminium(III) chloride, anhydrous

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

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Acute inhalation toxicity

Symptoms: mucosal irritations, Cough, Shortness of breath, Possible damages:, damage of respiratory tract

Acute dermal toxicity

LD50 Rabbit: > 2,000 mg/kg

(RTECS) The value is given in analogy to the following substances: aluminium(III) chloride, anhydrous

Skin irritation

Causes burns.

In vitro study

Result: Corrosive

OECD Test Guideline 435

The value is given in analogy to the following substances: aluminium(III) chloride, anhydrous

Eye irritation

Causes serious eye damage.

Risk of blindness!

human

Result: Causes burns.

(IUCLID) The value is given in analogy to the following substances: aluminium(III) chloride, anhydrous

Sensitisation

Sensitisation test: Guinea pig

Result: negative

Method: OECD Test Guideline 406

The value is given in analogy to the following substances: aluminium(III) chloride, anhydrous

Germ cell mutagenicity

This information is not available.

Carcinogenicity

This information is not available.

Reproductive toxicity

This information is not available.

Teratogenicity

This information is not available.

Specific target organ toxicity - single exposure

This information is not available.

Specific target organ toxicity - repeated exposure

This information is not available.

Aspiration hazard

This information is not available.

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11.2 Further information

The following applies to aluminium compounds in general: After swallowing: only slightly absorbable via the gastrointestinal tract. Serious disorders in man (from about 4000 mg aluminium up): phosphate metabolism, calcium metabolism. Other dangerous properties can not be excluded.

Handle in accordance with good industrial hygiene and safety practice.

SECTION 12. Ecological information

12.1 Toxicity

No information available.

12.2 Persistence and degradability

Biodegradability

Not applicable for inorganic substances

12.3 Bioaccumulative potential

No information available.

12.4 Mobility in soil

No information available.

12.5 Results of PBT and vPvB assessment

Substance does not meet the criteria for PBT or vPvB according to Regulation (EC) No 1907/2006, Annex XIII.

12.6 Other adverse effects

Additional ecological information

Biological effects:

Harmful effect due to pH shift.

Forms corrosive mixtures with water even if diluted.

The following may develop after reaction of the product with water:

Hydrogen chloride gas

Discharge into the environment must be avoided.

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SECTION 13. Disposal considerations

Waste treatment methods

Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself.

See www.retrologistik.com for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

According to Quality Environment Regulation (Scheduled Waste) 2005, waste need to be sent to designated premise for recycle, treatment or disposal. Please contact Kualiti Alam for waste classification and correct disposal method.

SECTION 14. Transport information

Land transport (ADR/RID)

| | |
|--|--|
| 14.1 UN number | UN 3260 |
| 14.2 Proper shipping name | CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S. (ALUMINIUM CHLORIDE HEXAHYDRATE) |
| 14.3 Class | 8 |
| 14.4 Packing group | II |
| 14.5 Environmentally hazardous | -- |
| 14.6 Special precautions for user | yes |
| Tunnel restriction code | E |

Inland waterway transport (ADN)

Not relevant

Air transport (IATA)

| | |
|--|--|
| 14.1 UN number | UN 3260 |
| 14.2 Proper shipping name | CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S. (ALUMINIUM CHLORIDE HEXAHYDRATE) |
| 14.3 Class | 8 |
| 14.4 Packing group | II |
| 14.5 Environmentally hazardous | -- |
| 14.6 Special precautions for user | no |

Sea transport (IMDG)

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14.1 UN number

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CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S.
(ALUMINIUM CHLORIDE HEXAHYDRATE)

14.3 Class

8

14.4 Packing group

II

14.5 Environmentally hazardous

--

14.6 Special precautions for user

yes

EmS F-A S-B

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

Not relevant

SECTION 15. Regulatory information

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

All national and local regulations, including Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013, if applicable to the use, should be observed.

National legislation

Storage class 8B

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.

H314 Causes severe skin burns and eye damage.

Training advice

Provide adequate information, instruction and training for operators.

Labelling

Hazard pictograms



Signal word

Danger

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Precautionary statements

Prevention

P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response

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.

Key or legend to abbreviations and acronyms used in the safety data sheet

Used abbreviations and acronyms can be looked up at www.wikipedia.org.

Regional representation

Merck Sdn. Bhd. (Co. No: 178145), No. 4, Jalan U1/26, Section U1, Hicom Glenmarie Industrial Park, 40150 Shah Alam, Selangor. Tel: 03-74943688 Fax: 03-74910850

The information contained herein is based on the present state of our knowledge. It characterises the product with regard to the appropriate safety precautions. It does not represent a guarantee of any properties of the product.

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