

1 SECTION 1: IDENTIFICATION OF THE SUBSTANCE OR MIXTURE AND OF THE COMPANY/FIRM

1.1 Product identifier

- Trade name MILLED ANHYDRITE

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

Uses of the Substance/Mixture

- Plaster agent
- Agricultural industry
- Additives for building material

1.3 Information on the supplier of the safety data sheet

Company

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E-mail address

msds@alkeemia.com

Emergency telephone number

Telephone number of the poison control centre (Ospedale Niguarda (MI)) +39 02 66101029 (24h)

2 SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification (Regulation (EC) No. 1272/2008)

- Severe eye injuries, Category 1 H318: Causes severe eye injuries.

2.2 Label elements

Regulation (EC) No. 1272/2008

Pictogram



Warning

- Hazard

Hazard indications

- H318 Causes severe eye damage.

Cautionary advice

Prevention

- P264 Wash hands thoroughly after use.
- P280 Wear protective gloves/protective clothing/eye protection/face protection

Reaction

- P305 + P351 + P338 IN CASE OF CONTACT WITH THE EYES: rinse thoroughly for several minutes. Remove any contact lenses if it is easy to do so. Continue to rinse
- P337 + P313 If eye irritation persists, consult a doctor

2.3 Other hazards that do not require classification

Results of PBT and vPvB assessment

- This substance is not considered persistent, bioaccumulative and toxic (PBT).
- This substance is not considered very persistent and very bioaccumulative (vPvB).

3 SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substance

- Not applicable, the product is a mixture.

3.2 Mixture

Information on Components and Impurities.

Chemical Name	Identification number	Classification Regulation (EC) No. 1272/2008	Concentration [%]
calcium sulphate	CAS No.: 7778-18-9 EINECS No.: 231-000-2 Registration number: 01-2119444918-26-0058	Not classified	>= 94
calcium dihydroxide	CAS No.: 1305-62-0 EINECS No.: 215-137-3	Skin irritation, Category 2; H315 Severe eye injuries, Category 1; H318 Specific target organ toxicity - single exposure, Category 3; H335	<= 3
autoclassification			
calcium fluoride	CAS No.: 7789-75-5 EINECS No.: 232-100-7		<= 3
autoclassification			

As regards the full text of the hazard statements mentioned in this paragraph, please refer to paragraph 16.

4 SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures

If inhaled

- Take out into the fresh air.
- Move the subject away from the dusty environment and let him/her blow his/her nose.
- If symptoms persist, consult a doctor.

In case of contact with the skin

- Wash with soap and water.
- If symptoms persist, consult a doctor.

In case of contact with the eyes

- In case of contact with the eyes, remove any contact lenses and rinse immediately with plenty of water, even under the eyelids, for at least 15 minutes.
- In the event of difficulty in opening the eyelids, administer analgesic eye drops (e.g. oxybuprocaine).
- If eye irritation persists, consult a doctor.

If swallowed

- Rinse the mouth with water.
- DO NOT induce vomiting.

4.2 Main symptoms and effects, both acute and delayed

If inhaled

Effects

- These can irritate the eyes, nose and throat.

Repeated or prolonged exposure

- Risk of sore throat, nosebleed.
- Risk of chronic bronchitis

In case of contact with the skin Effects

- Prolonged contact with the skin may cause irritation.

In case of contact with the eyes Effects

- Causes severe eye irritation.

If swallowed Effects

- Swallowing may cause gastrointestinal irritation, nausea, vomiting and diarrhoea.

4.3 Indication of any immediate medical attention and special treatment needed

- no data available

5 SECTION 5: FIRE-FIGHTING MEASURES

5.1 Extinguishing media**Suitable extinguishing media**

- Use extinguishing systems compatible with the local situation and with the surrounding environment.

Unsuitable extinguishing media

- Not known.

5.2 Special hazards arising from the substance or mixture

- Not combustible.
- Dangerous decomposition products in case of fire.

5.3 Recommendations for firefighters**Special protective equipment for firefighters**

- In case of fire, wear breathing apparatus with an independent air supply.
- Use personal protective equipment.
- Cool containers/tanks with water spray.
- Avoid the formation of dust.

6 SECTION 6: MEASURES IN CASE OF ACCIDENTAL RELEASE

6.1 Personal precautions, protective equipment and emergency procedures**Advice for personnel not assigned to emergency situations**

- Keep people away from the leak, upwind.
- Avoid the formation of dust.

Advice for personnel assigned to emergency situations

- Wear self-contained breathing apparatus and protective clothing.
- Collect the leakage to avoid danger of slipping.
- Avoid further spills or leaks.

6.2 Environmental precautions

- It must not be abandoned in the environment.

6.3 Methods and materials for containment and reclamation

- Remove and transfer to an appropriately labelled container.
- Store in suitable closed containers for disposal.

6.4 References to other sections

- Refer to the protective measures listed in sections 7 and 8.

7 SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling

- Use only in a well-ventilated place.
- Keep away from incompatible products

Hygiene measures

- Eye wash bottles or eye wash stations in accordance with current regulations.
- Do not eat, drink or smoke during use.
- Handle in accordance with good industrial hygiene and safety practices.
- Wash hands before breaks and at the end of the working day.

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/storage methods

- Store in the original container.
- Keep in a dry place.
- Keep in properly labelled containers.
- Keep the container closed.
- Keep away from incompatible products

Packaging material

Suitable materials

- Large bulk packaging (GIR)

Unsuitable materials

- no data available

7.3 Specific end uses

- For further information, please contact your supplier

8 SECTION 8: EXPOSURE CONTROL/PERSONAL PROTECTION

8.1 Control parameters

Components with occupational exposure limits in the workplace

Components	Type of	Value	Base
calcium sulphate	TWA	10	USA. ACGIH threshold limit values Type of exposure: Inhalable fraction Type of nomenclature: Calcium
calcium dihydroxide	TWA	5 mg/m3	Commission Directive 91/322/EEC on the fixing of indicative limit values Scientific data on health effects are particularly limited, Indicative
calcium dihydroxide	TWA	5	USA. ACGIH threshold limit values
calcium fluoride	TWA	2.5 mg/m3	Indicative limit values for occupational exposure to chemical agents Type of nomenclature: Fluoride
calcium fluoride	TWA	2.5 mg/m3	Commission Directive 2000/39/EC establishing a first list of indicative limit values Indicative
calcium fluoride	TWA	2.5 mg/m3	Commission Directive 2000/39/EC establishing a first list of indicative limit values Indicative Type of nomenclature: Fluoride
calcium fluoride	TWA	2.5	USA. ACGIH threshold limit values Type of nomenclature: Fluoride
calcium sulphate	-----	-----	USA. ACGIH threshold limit values Type of exposure: Inhalable fraction Type of nomenclature: Calcium

Biological Exposure Indicators (BEI):

Components	Type of	Value	Base
calcium fluoride	BEI	2 mg/l Fluoride in Urine Before the shift (16 hours after termination of exposure)	ACGIH - Biological Exposure Indicators (BEI)

	BEI	3 mg/l Fluoride Urine At end of shift (as soon as possible after termination of exposure)	ACGIH - Biological Exposure Indicators (BEI)
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Derived no effect level (DNEL) / Derived minimal effect level (DMEL)

- no data available

Predicted no effect concentration (PNEC)

- Minimize exposure to mists/vapours/aerosols. Before accessing the storage tanks and starting any kind of intervention in a confined space, check the atmosphere and verify the oxygen content.
- Monitoring procedures: refer to Legislative Decree 81/2008 as amended or to good industrial hygiene practices.

8.2 Exposure controls

Control measures

Suitable technical controls

- Provide adequate ventilation in places where dust develops.
- Apply the necessary technical measures to avoid exceeding the occupational exposure limit values.

Personal protection measures

Respiratory protection

- When concentrations above the exposure limits occur, the use of appropriate respiratory protection systems is mandatory.
- Breathing apparatus with dust filter
- Suggested filter type: Filter P2 (UNI EN 14387:2004)

Hand protection

- Gloves resistant to chemical agents and leakproof, refer to UNI EN 374. Gloves must be inspected periodically and replaced in case of wear, perforation or contamination.

Suitable materials

- PVC
- Neoprene
- Natural rubber
- with a chemical protection index of at least 5 (permeation time > 240 minutes), thickness of at least 0.35 mm.

Eye protection

- Wear safety goggles suitable for chemical hazards.
- Dust-tight goggles in case of presence of dust
- Refer to the standard (EN 166)

Skin and body protection

- Dust-tight protective clothing
- Refer to UNI EN standard 14605:2005.

Hygiene measures

- Eye wash bottles or eye wash stations in accordance with current regulations.
- Do not eat, drink or smoke during use.
- Handle in accordance with good industrial hygiene and safety practices.
- Wash hands before breaks and at the end of the working day.

Environmental exposure controls

- Dispose of the washing water according to national and local regulations.

9 SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	Physical state: powder, hygroscopic, solid Colour: light brown
Particle size	< 1 mm (60%)
Smell	odourless
Odour detection threshold	no data available
pH	> 10.0 (2 g/l) (20°C)
Melting point/melting range	1.450°C (1.013 hPa)

Boiling point/boiling range	Not applicable
Flash point	no data available
Evaporation rate (butylacetate = 1)	no data available
Flammability (solids, gas)	The product is not flammable
Flammability/Explosion limit	Explosion index: Non-explosive
Auto-ignition temperature	no data available
Vapour pressure	Not applicable
Vapour density	Not applicable
Density	Relative density: 2.96 (20°C)
Solubility	Water solubility: 2.4 g/l (20°C) slightly soluble Solubility in other solvents: acids: soluble
Partition coefficient: n- tnanol/water	Not applicable
Thermal decomposition	no data available
Viscosity	Dynamic viscosity: Not applicable
Explosive properties	no data available
Oxidizing properties	It is not considered as oxidizing

9.2 Other information

Molecular Weight 136 g/mol

10 SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity

- Incompatible with acids.
- Decomposes slowly when exposed to water.

10.2 Chemical stability

- Stable under recommended storage conditions.

10.3 Possibility of dangerous reactions

- no data available

10.4 Conditions to be avoided

- Exposure to moisture.

10.5 Incompatible materials

- Strong acids

10.6 Hazardous decomposition products

- Sulphur oxides

11 SECTION 11: TOXICOLOGICAL INFORMATION

11.1 11.1 Information on toxicological effects

Acute toxicity

Acute oral toxicity

calcium sulphate	LD50 : > 2.000 mg/kg - Rat
calcium dihydroxide	> 2.000 mg/kg - Rat, female Feeding with probe Not classified as harmful if swallowed Unpublished reports
calcium fluoride	LD50 : > 2.000 mg/kg - Rat

Acute inhalation toxicity

calcium fluoride LC50 - 4 h : > 5.070 mg/m3 - Rat

Acute skin toxicity

calcium dihydroxide > 2.500 mg/kg - Rat, female
 Not classified as harmful by skin contact
 Unpublished reports

calcium fluoride scientifically unjustified study

Acute toxicity

(for other routes of administration) no data available

Skin corrosion/irritation

calcium dihydroxide On rabbit
 Irritating to the skin.
 Unpublished reports

Skin corrosion/irritation

calcium fluoride On rabbit
 No skin irritation

Severe eye injuries/severe eye irritation

calcium dihydroxide On rabbit
 Risk of severe eye injuries.
 Unpublished reports

calcium fluoride On rabbit
 No eye irritation

Respiratory or skin sensitisation

calcium sulphate Guinea pig
 Causes no sensitisation on laboratory animals.

Calcium fluoride Local lymphatic ganglion test.
 Causes no sensitisation on laboratory animals.

Mutagenicity

Genotoxicity in vitro

calcium sulphate In vitro assays revealed no mutagenic effects

calcium dihydroxide In vitro assays revealed no mutagenic effects

calcium fluoride In vitro assays revealed no mutagenic effects

Genotoxicity in vivo

calcium sulphate In vivo assays revealed no mutagenic effects

Carcinogenicity

calcium dihydroxide humans
 carcinogenic effects
 negative

calcium fluoride negative

Toxic for reproduction and development

Toxic for reproduction/fertility

calcium sulphate Prolonged exposure – Rat
 Oral
 NOAEL Parents: 790 mg/kg
 Developmental toxicity
 Effects on fertility

calcium dihydroxide humans
 NOAEL F1: 38 mg/kg
 Experiments on fertility and developmental toxicity
 have revealed no effect on reproduction.

calcium fluoride Experiments on fertility and developmental toxicity
 have revealed no effect on reproduction.

Developmental toxicity/Teratogenicity

calcium sulphate Various species
 Methods of application: Oral
 NOAEL teratogenicity: 1,600 mg/kg
 Developmental toxicity

calcium dihydroxide NOAEL teratogenicity: 680 mg/kg
 no effect on development has been observed
 It showed no teratogenic effects in animal experiments
 Unpublished reports

NOAEL teratogenicity: 440 mg/kg
 no effect on development has been observed
 It showed no teratogenic effects in animal experiments.
 Unpublished reports

STOT

Specific target organ toxicity (STOT) - single exposure

calcium dihydroxide May cause respiratory irritation.

calcium fluoride The substance or mixture is not classified as an organ intoxicant specific target for single exposure according to GHS criteria.

Specific target organ toxicity (STOT) - repeated exposure

calcium sulphate The substance or mixture is not classified as an organ intoxicant specific target for repeated exposure according to GHS criteria.

calcium dihydroxide The substance or mixture is not classified as an organ intoxicant specific target for repeated exposure according to GHS criteria.

calcium sulphate Oral 28 days – Rat
 NOAEL: 79 mg/kg

Oral 35 Days – Rat
 NOAEL: 79 mg/kg

calcium dihydroxide - Various species
 No adverse effects have been observed in chronic toxicity tests.
 Bibliographic data

calcium fluoride Repeated exposure – Rat
 NOAEL: ca. 475 mg/kg
 observed effect

Experience on human exposure

Experience on human exposure: Inhalation

calcium dihydroxide Target organs: Respiratory system
 Symptoms: Local irritation
 Bibliographic data

Aspiration toxicity

- no data available

12 SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity

Aquatic compartment

Acute toxicity to fish

calcium sulphate LC50 - 96 h: > 79 mg/l - Fish, Oryzias latipes

calcium dihydroxide LC50 - 96 h: 50.6 mg/l - Oncorhynchus mykiss (Rainbow trout)
 Method: OECD Test Guidelines 203
 Non-neutralised product
 Unpublished reports
 LC50 - 96 h: 457 mg/l – Fish
 Non-neutralised product
 Bibliographic data

Acute toxicity to daphnia and other aquatic invertebrates.

calcium sulphate LC50 - 48 h: > 79 mg/l - Daphnia magna (Large water flea)

Fresh water

calcium dihydroxide

LC50 - 48 h : 49.1 mg/l - Daphnia magna (Large water flea)
 Method: OECD TG 202
 Non-neutralised product
 Unpublished reports

LC50 - 96 h : 158 mg/l - Invertebrates: Amphipods
 Non-neutralised product
 Bibliographic data

Toxicity to aquatic plants

calcium dihydroxide

EC50 - 72 h : 184.57 mg/l - Pseudokirchneriella subcapitata
 Method: OECD TG 201
 Growth rate
 Non-neutralised product
 Unpublished reports

NOEC - 72 h : 48 mg/l - Pseudokirchneriella subcapitata
 Method: OECD TG 201
 Growth rate
 Non-neutralised product
 Unpublished reports

Toxicity to micro-organisms

calcium dihydroxide

EC50 - 3 h : 300.4 mg/l - activated sludge
 Non-neutralised product
 Unpublished reports

Chronic toxicity to daphnia and other aquatic invertebrates.

calcium dihydroxide

NOEC: 32 mg/l - 14 d - Invertebrates: Amphipods
 Non-neutralised product
 Bibliographic data

Terrestrial compartment

Toxicity to organisms living in the soil

calcium dihydroxide

LC50: > 5.000 mg/kg - 14 d - Eisenia fetida (earthworms)
 Unpublished reports

NOEC: 2,000 mg/kg - 28 d - Eisenia fetida (earthworms)
 Unpublished reports

NOEC: 4.,000 mg/kg - 96 d - soil microorganisms
 Unpublished reports

Toxicity to terrestrial plants

calcium dihydroxide

NOEC: 1,080 mg/kg - Beta vulgaris
 Duration of the experiment: 21 d

NOEC: 1,080 mg/kg - Brassica napus
 Duration of the experiment: 21 d

12.2 Persistence and degradability

abiotic degradation

Photodegradation

calcium dihydroxide

complexation/precipitation
 sensitiser: carbonates/sulphates are present in concentrations similar to those in the environment
 Water/Soil
 Degradation products: poorly soluble carbonates/sulphates

Water
 Degradation products:
 carbonic acid/bicarbonate/carbonate
 Hydrolysis as a function of pH

calcium fluoride

Medium
 Water
 Soil
 Degradation products: hydrofluoric acid

inert product under normal environmental conditions
 Medium

Water
Soil

Biodegradation

Biodegradability
calcium dihydroxide

Not applicable (inorganic substance)

calcium fluoride

The methods for determining biodegradability do not apply to inorganic substances.

12.3 Bioaccumulation potential

Bioconcentration factor (BCF)

calcium dihydroxide

Does not bio-accumulate
internal assessment

calcium fluoride

Not applicable

12.4 Mobility in the soil

Absorption potential (Koc, organic carbon absorption)

calcium fluoride

Water/Soil
low solubility and mobility

Soil/sediments
Adsorption on soil organic and mineral components

12.5 Results of PBT and vPvB assessment

This substance is not considered persistent, bioaccumulative and toxic (PBT).
This substance is not considered very persistent and very bioaccumulative (vPvB).

12.6 Other adverse effects

no data available

Ecotoxicity assessment

Acute toxicity to the aquatic environment

calcium dihydroxide

If the product is not neutralised, it may cause harmful effects on aquatic organisms because of its alkalinity.

calcium fluoride

No toxicity within the limit of solubility

Chronic toxicity to the aquatic environment

calcium fluoride

No toxicity within the limit of solubility

13 SECTION 13: CONSIDERATIONS ON DISPOSAL

Waste treatment methods Destruction/Elimination

- Can be buried in authorised landfill after compacting.
- Dispose of in accordance with the regulations in force.

Recommendations on cleaning and disposal of packaging

- Recycling is recommended instead of landfill or incineration.
- Clean the container with water.
- Dispose of the washing water according to national and local regulations.
- It must be incinerated in a suitable waste incineration plant authorised by the competent authorities.

14 SECTION 14: TRANSPORT INFORMATION

ADR

unregulated

RID
 unregulated

IMDG
 unregulated

IATA
 unregulated

ADN/ADNR
 unregulated

Note: The above regulatory requirements are those in force on the date of completion of the form. However, taking into account the possible evolution of the regulations concerning the transport of dangerous products, it is advisable to check their validity with your commercial agency.

15 SECTION 15: REGULATORY INFORMATION

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

Other legislation

- Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), as amended. Title VIII Restrictions: the product is subject to Restrictions
- Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), as amended. Title VII Authorisation: Product not subject to authorisation.
- Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, as amended.
- Council Directive 98/24/EC of 7 April 1998 on the protection of the health and safety of workers from the risks related to chemical agents at work, and subsequent amendments (Legislative Decree 81/08).
- Italian Legislative Decree 81/08 Titolo IX, capo I: chemical dangerous mixture
- Italian Legislative Decree 81/08 Titolo IX, capo II: no cancerogenity/mutagenety
- Italian Seveso category (Dir. 2012/18/UE) DLgs n.105/2015): not applicable
- European Waste Catalogue
- Waste codes must be assigned by the user according to the application that has been made of this product.

Notification status

Inventory Information

United States TSCA Inventory

Situation

Listed in this inventory

Canadian Domestic Substances List (DSL)

Listed in this inventory

Australia Inventory of Chemical Substances (AICS)

Listed in this inventory

Korea. Korean Existing Chemicals Inventory (KECI)

Listed in this inventory

China. Inventory of Existing Chemical Substances in China (IECSC)

Listed in this inventory

Japan. ISHL - Inventory of Chemical Substances

Listed in this inventory

Japan. CSCL - Inventory of Existing and New Chemical Substances

Listed in this inventory

Philippines Inventory of Chemicals and Chemical Substances (PICCS)

Listed in this inventory

New Zealand. Inventory of Chemical Substances

Listed in this inventory

Taiwan. Chemical Substance Inventory (TCSI)

Listed in this inventory

EU. European Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)

The product was manufactured by Fluorsid Alkeemia in Europe and complies with REACH.

15.2 Chemical safety assessment

- Not available.

16 SECTION 16: OTHER INFORMATION

Revision

This document is the first issue by FLUORSID ALKEEMIA SpA.

Further information

Evaluation method used for classification under Reg 1272/2008 as amended:

Calculation method Tab 3.2.3

References to hazard statements in full text under paragraphs 2 and 3.

- H315 Causes skin irritation.
- H318 Causes severe eye damage.
- H335 May cause respiratory irritation.

Explanation or legend of abbreviations and acronyms used in the safety data sheet

- TWA Limit Values - 8 Hours

NB: In this document the digital separator of the thousands is "," (comma), the decimal separator is "." (period).

The information contained in this Safety Data Sheet has been compiled to the best of our knowledge on the date of publication of this document. This information is provided for guidance only in order to assist the user in carrying out the handling, use, treatment, storage, transport, disposal and use of the product in satisfactory conditions of safety, and should therefore not be construed as a guarantee, or considered as quality specifications. It completes the technical instructions, but does not replace them. This information relates only to the precisely designated product and, unless specifically stated otherwise, is not applicable when the product is used together with other substances, or used in other manufacturing processes. In no event does this information exempt the user from making sure that he is in compliance with the entire legislation governing his activity.