

Flue Gas Desulphurisation gypsum

1. IDENTIFICATION OF THE SUBSTANCE AND OF THE COMPANY

1.1 Product identifier

Substance name:

Calcium sulfate

Trade name:

Flue Gas Desulphurisation gypsum

Composition:

CaSO₄·2H₂O

EC No:

231-900-3

REACH No (general part):

01-2119444918-26-xxxx

N.B.: Full registration numbers of individual producers are available on request

CAS No:

7778-18-9

1.2 Relevant identified uses of the substance and uses advised against

Use of the substance: plasters, fibre board, plaster board, plaster blocks and fertilizer

1.2.1 Relevant identified uses

The product is intended for industrial use.

The product is intended for professional use.

The product is intended for private use.

The product is intended for research, analysis and scientific education.

1.2.2 Uses advised against:

None.

1.3 Details of the supplier of the safety information sheet

Supplier:

Vliegasunie B.V. (Distributor)

Information contact:

Vliegasunie B.V.

P.O. Box 265

4100 AG Culemborg

The Netherlands

VLIEGASUNIE BV

P.O. Box 265

4100 AG Culemborg

The Netherlands

Phone: +31 345 509988

Fax : +31 345 509980

www.vliegasunie.nl

Phone (only available during office hours): +31 (0) 345 50 99 88
Fax: +31 (0) 345 50 99 80
E-Mail (competent person): info@vliegasonie.nl

1.4 Emergency Telephone Number

European Emergency Call: 112

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance

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

This substance is not classified as hazardous according to Regulation (EC) No 1272/2008 [CLP].

2.1.2 Classification according to Directive 67/548/EEC [Dangerous Substances]:

This substance is not classified as dangerous according to 67/548/EEC.

2.2 Label elements

This substance does not need to be labelled according to Regulation (EC) No 1272/2008 [CLP].
This substance does not require Risk or Hazard statements (R- and H-phrases).

2.3 Other hazards

No special remarkable hazards.
Please observe the information given in this safety information sheet.

Adverse physicochemical effects:

No special remarkable hazards.

Adverse human health effects and symptoms:

No special remarkable hazards.

Adverse environmental effects:

No special remarkable hazards.

Other adverse effects:

Large quantities of dust may be produced during dry-state pulverization.

3. COMPOSITION / INFORMATION ON INGREDIENTS

3.1 Substances

Substance name:

Calcium sulfate

Composition:

CaSO₄·2H₂O

Purity:

≥ 95 % m/m; occasionally >90% m/m

Synonymes:

Flue Gas Desulphurisation Gypsum, FGD Gypsum, Gypsum, Gips, Rookgasontzwaveling(s)gips, RO-gips, ROI-gips

Stabilisers: None.

Hazard impurities: None

Additional information: None

4. FIRST AID MEASURES

4.1 Description of first aid measures

General notes

No adverse effects are expected during normal use of the substance, however if any effects do appear the following recommendations apply.

Following inhalation:

Following inhalation of large quantities of dust remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Following skin contact:

If some discomfort appears immediately flush skin with plenty of water. Remove contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse.

Following eye contact:

Immediately flush eyes with plenty of water, lifting lower and upper eyelids occasionally. Get medical attention immediately.

Following ingestion:

Following ingestion of large quantities of dust induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention.

Notes for the doctor:

Skin – friendly neutral salt. No allergic reactions known. Soluble dust.

4.2 Most important symptoms and effects, both acute and delayed

No specific symptoms or effects have been reported.

4.3 Indication of any immediate medical attention and special treatment needed

Not applicable.

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media:

Use any means suitable for extinguishing surrounding fire. The substance itself is not combustible.

Unsuitable extinguishing media:

None.

5.2 Special hazards arising from the substance

None.

5.3 Advice for fire-fighters

Product itself does not burn.

Co-ordinate fire-fighting measures to the fire surroundings.

Special protective equipment for fire-fighters:

None.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel and for emergency personnel:

Ventilate area of leak or spill. Wear appropriate personal protective equipment.

Avoid generation of dust, especially airborne dust.

Special danger of slipping by leaking/spilling product.

6.2 Environmental precautions:

No special environmental measures are necessary.

6.3 Methods and material for containment and cleaning up

For containment

All containment for dry substances suitable.

For cleaning up

Vacuuming cleaning may be used. Avoid dust dispersal.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

General measures:

Avoid dust dispersion.

Avoid inhalation of dust/particles.

Avoid eye contact.

Avoid prolonged skin contact.

Personal Protective Equipment (PPE)

In case dust exposure is inevitable (as a result of higher level control measures), it is recommended to use PPE (see 8.2.2).

Measures to prevent fire

Product itself does not burn.

No special fire protection measures are necessary.

Measures to prevent aerosol and dust generation:

If technically possible use local exhaust ventilation.

Measures required to protect the environment:

No special provisions if the product is used appropriately.

Advice on general occupational hygiene:

Do not eat, drink and smoke in work areas.

Wash hands after use.

Remove contaminated clothing and protective equipment before entering eating areas.

7.2 Conditions for safe storage, including any incompatibilities

Technical measures and storage conditions:

Packaging materials: Keep/store only in original container.

Requirements for storage rooms and vessels:

None.

Hints on storage assembly:

Storage class:

Non-combustible solids.

Further information on storage conditions:

Storage according to BREF "Emissions from Storage"

<http://eippcb.jrc.es/reference/>

8. EXPOSURE CONTROLS / PERSONAL PROTECTIVE EQUIPMENT (PPE)

8.1 Control parameters

8.1.1 Occupational exposure limits:

No public limit values for calcium sulfate applicable in The Netherlands.

No public limit values for respirable/inhalable nuisance dust applicable in The Netherlands.

In the UK a limit value of 10 mg/m³ for inhalable nuisance dust is applicable.

In EU countries limit values of 10 mg/m³ for inhalable nuisance dust are applicable.

In EU countries limit values of 3 – 6 mg/m³ for respirable nuisance dust are applicable.

See 8.1.4 for recommended exposure limits.

8.1.2 Monitoring procedures

None.

8.1.3 Biological limit values

None.

8.1.4 Additional no-effect levels (DNEL, PNEC) and recommended exposure limits

| DNEL* (general population) | Exposure pattern | Value |
|-------------------------------|------------------------|-------------------|
| Oral | Acute systemic effects | 11.4 mg/kg bw/day |
| | Long term systemic | 1.52 mg/kg bw/day |

* Derived No Effect Level

| PNEC* | Remarks |
|------------------------|--|
| Aquatic | Not acutely toxic to fish, invertebrates, algae and microorganisms at the concentrations tested in the studies. Acute toxicity of calcium sulfate to fish, invertebrates, algae and microorganisms are generally greater than the highest concentrations tested and are greater than the maximum solubility of calcium sulfate in water. |
| Sediment | Not applicable due to ubiquitous nature of calcium and sulfate ions in the environment |
| Soil | Not applicable due to ubiquitous nature of calcium and sulfate ions in the environment |
| Sewage Treatment Plant | Not toxic to STP microorganisms |

* Predicted No Effect Concentration

| Recommended Exposure Limit Values (Workers) * | Remarks | Limit value 8-hours ** |
|--|---------------------------|-------------------------------|
| Inhalation | Nuisance dust, respirable | 5 mg/m ³ |
| Inhalation | Nuisance dust, inhalable | 10 mg/m ³ |

* Available from Threshold Limit Value list (Netherlands, 2007), withdrawn in 2008

** Short term (15 min) limit value is equal to the 8 hours value multiplied by a factor of 2 (10 mg/m³ and 20 mg/m³ for respirable and inhalable nuisance dust respectively)

Note: it is always recommended to use national exposure limit values when available (see 8.1.1).

8.2 Exposure controls

8.2.1 Appropriate engineering controls

| | |
|-----------------------------|---|
| Closed cycles | Care for dedusting installations and chimney filters |
| Semi-closed and open cycles | Care for sufficient local exhaust ventilation or wetting the gypsum |

8.2.2 Personal Protective Equipment (PPE)

| | |
|-------------------------|--|
| Eye / face protection | Safety goggles if potential for contact is existing |
| Skin (hand) protection: | Gloves if potential for contact is given; further measures for body protection are usually not necessary |
| Respiratory protection | No special protective equipment required If dust occurs constantly – use respiratory dust mask (P1) |

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

| | |
|--|---|
| Physical state | Solid. Crystalline Powder Granulate |
| Colour: | White-grey, beige, light yellow |
| Odour: | Neutral |
| pH (20 °C): | in delivery state: not applicable in aqueous solution: ca. 7 |
| Melting point/freezing point: | 1450°C |
| Boiling point: | Not applicable |
| Flash point: | Not applicable |
| Flammability: | Not applicable |
| Upper/lower flammability or explosive limits: | Not applicable |
| Vapour pressure: | Not applicable |
| Density | 2,96 g/cm ³ |
| Bulk density: | 1300-1500 kg/m ³ |
| Water solubility (20°C): | about 2 g/l |
| Part. coeff. n-Octanol/Water (log Po/w): | Not applicable (inorganic) |
| Auto ignition temperature: | Not applicable |
| Decomposition Temperature (°C): into CaSO ₄ · 0.5 H ₂ O and 1.5 H ₂ O into CaSO ₄ and H ₂ O into CaO and SO ₃ | about 140°C (about 413 K) about 700°C (about 973 K) about 1000°C (about 1273 K) |
| Explosive properties: | Not explosive |
| Oxidizing properties: | Not oxidizing |

10. STABILITY AND REACTIVITY

10.1 Reactivity

Materials to avoid: No materials known.

10.2 Chemical stability

The substance is stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

10.3 Possibility of hazardous reactions

Mixing with an aqueous solution of sodium carbonate will result in the formation of carbon dioxide.

10.4 Conditions to avoid

Avoid contamination by sulphur-reducing bacteria and water under anaerobic conditions.

10.5 Incompatible materials

No incompatible materials known.

10.6 Hazardous decomposition products

Decomposition takes place from temperatures above: 1450°C

Decomposition under formation of: Sulphur trioxide and calcium oxide

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

| | |
|---|-------------------------------------|
| Acute toxicity Oral, inhalation, dermal | no acute toxicity |
| Irritation Skin, eye irritation | not irritating |
| Corrosivity | not corrosive |
| Sensitisation | not sensitising |
| Repeated dose toxicity | no repeated toxicity |
| Mutagenicity | not mutagen |
| Carcinogenicity | no carcinogenetic effects are known |
| Toxicity to reproduction | no reproduction toxicity |

12. ECOLOGICAL INFORMATION

12.1 Toxicity

The substance is not classified as hazardous.

No aquatic toxicity.

No toxicity for sewage treatment plant microorganisms.

After neutralisation, toxicity is no longer observed.

The ecological data were measured on the hydrolysed product.

12.2 Persistence and degradability

Biodegradation is not expected.

Abiotic degradation (e.g. oxidation, hydrolysis, photolysis) is not expected.

The product hydrolyses quickly in the presence of water to: Calcium and Sulfate Ions.

The individual components are poorly eliminated from water.

12.3 Bioaccumulative potential

Based on the substance properties there is no indication to bioaccumulation potential.

12.4 Mobility in soil

Water-soluble solid.

Natural constituent in soils.

If product enters soil, it will be mobile and may contaminate groundwater.

12.5 Results of PBT and vPvB assessment

This substance does **not** meet the criteria for classification as PBT or vPvB.

12.6 Other adverse effects

No other adverse effects on the environment are known.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product:

Waste disposal according to national regulations covering non-hazardous waste.

Waste codes according to EWC:

10 Wastes from thermal processes

10 01 Wastes from power stations and other combustion plants (except 19)

10 01 05 Calcium-based reaction wastes from flue-gas desulphurisation in solid form

The waste is to be kept separate from other types of waste until its recycling.

Non-contaminated packages may be recycled.

Additional information:

Product: product can be further used without restrictions if not subsequently contaminated.

Waste: Recovery/recycling in installations with permit for the waste codes given above. Waste disposal on disposal classes for non-inert waste according to 2003/33/EC.

14. TRANSPORT INFORMATION

Transport according to national, European (EU) and international (OECD, ADR, IMDG, IATA) regulations for **non-hazardous** substances

15. REGULATORY INFORMATION

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

EU regulations:

This substance is **not** classified as hazardous according to Regulation (EC) No 1272/2008 [CLP]

This substance is **not** classified as dangerous according to 67/548/EEC [Dangerous Substances]

15.2 Chemical Safety Assessment:

For this substance a Chemical Safety Assessment has been carried out

16. OTHER INFORMATION

16.1 Changes in this version

None.

16.2 Training instructions

Training instructions on health and safety issues are available on www.eurogypsum.org

- Manual handling of loads -

16.3 Disclaimer

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety information sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety information sheet is not necessarily valid for the new made-up material.

Flue Gas Desulphurisation gypsum is registered under REACH as "Calcium Sulfate". The product is not classified as hazardous and therefore a safety data sheet (SDS) is legally not obligatory. This safety information sheet (SIS) was composed on a voluntary basis. The information given follows by structure and content Annex 2 of REACH-regulation (EC No 1907/2006 and amendment 453/2010) regarding the preparation of a SDS.