

Material Safety Data Sheet

In accordance with Regulation (EC) 1907/2006 and Regulation (EC) 453/2010

Issued: 16-12-2013

Rev: 01

ANHYDROUS CALCIUM SULFATE (ANHYDRITE)

1. Company and Product Identification

1.1 Substance identification

Chemical name	:	ANHYDROUS CALCIUM SULFATE
Commercial name	:	ANHYDRITE
C.A.S. Nr.	:	7778-18-9
EINECS Nr.	:	231-900-3
Chemical formula	:	CaSO ₄
Molecular weight	:	136,14
Registration number	:	01-2119444918-26-XXXX

1.2 Application Fields

Self-levelling floors, plasters, panels and bricks for internal applications.

Binding agents; Fertilisers; Fillers; Food/feedstuff additives; Intermediates; Laboratory chemicals, Pharmaceutical substance; pH-regulating agents; Process regulators, other than polymerisation or vulcanisation processes; Processing aid, not otherwise listed;

Agents adsorbing and absorbing gases or liquids; Colouring agents, pigments; Complexing agents;

Relevant identified uses

The product is intended for industrial, professional, private use and for research, analysis and scientific education.

Uses advised against

None

1.3 Company Identification

Company Name:	Francis Flower (Northern) Limited
Address:	Percival Lane Runcorn Cheshire WA7 4UY UK
Phone Nr.:	+ 44 1928 574574
E-mail:	ff@francisflower.co.uk
Website:	www.francisflower.com

1.4 Emergency phone number

Emergencies: +441928 574574

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2. Hazard Identification

2.1 Classification of the substance

2.1.1 Classification according to Regulation (EC) No 1272/2008 [EU-GHS/CLP]:

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

2.1.2 Classification according to Directive 67/548/EEC:

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

2.2 Label elements

2.2.1 Labelling according Regulation (EC) N° 1272/2008 [CLP]

This substance is not labelled according to Regulation (EC) N° 1272/2008 [CLP]

2.3 Other hazards

No special remarkable hazards.

3. Composition/Information on Ingredients

Name	ANHYDROUS CALCIUM SULFATE
CAS	7778-18-9
EINECS	231-900-3
Purity	96%
Synonyms	ANHYDRITE
Registration number	01-2119444918-26-0010

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 for at least 15 minutes. Remove contaminated clothing and shoes. Get medical attention. Wash clothing before reuse. Thoroughly clean shoes before reuse.

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Following eye contact:

Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

Following ingestion:

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. Fire fighting measures

5.1 Extinguishing media

Suitable extinguishing media:

Use any means suitable for extinguishing surrounding fire.

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.

Special danger of slipping by leaking/spilling product.

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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

Spills: Sweep up and containerize for reclamation or disposal. Vacuuming or wet sweeping may be used to avoid dust dispersal

6.4 Reference to other sections

None

7. Handling and Storage

7.1 Precautions for safe handling

Protective measures:

No special provisions if the product is used appropriately.

Avoid:

Dust dispersion. Inhalation of dust/particles
Eye contact

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 to 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.

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Requirements for storage rooms and vessels:

None.

Hints on storage assembly:

None. Storage under cover, protected from the weather and in particular moisture. Store the product in closed containers in order to protect from moisture

Storage class:

Non-combustible solids.

Further information on storage conditions:

Storage according to BREF "Emissions from Storage"
<http://eippcb.jrc.es/reference/>

7.3 Specific end uses:

None

8. Exposure controls / Personal protection

8.1 Control parameters

8.1.1 Occupational exposure limits:

Substance	Dust, respirable	
	Limit value - Eight hours	Limit value - Short term
	mg/m ³	mg/m ³
Austria	5	10
Belgium	3	
France	5 respirable aerosol	
Germany (AGS)	3	6
Germany (DFG)	1,5	
Hungary	6	
Italy		
Latvia	4	
Poland		
Spain	3	
Sweden	5	
Switzerland	3	
The Netherlands		
USA - NIOSH		
USA - OSHA	5	
United Kingdom	4	
	Remarks	
Austria	STV 15 minutes average value	
France	Bold type: Restrictive statutory limit values	
Germany (AGS)	15 minutes average value, insoluble particulates	
Germany (DFG)	insoluble particulates	
Latvia	dust containing chemicals	

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Substance	Dust, inhalable	
	Limit value - Eight hours	Limit value - Short term
	mg/m ³	mg/m ³
Austria	10	20
Belgium	10	
Denmark	10	20
France	10	
Germany (AGS)	10	20
Germany (DFG)	4	
Hungary	10	
Poland	10	
Spain	10	
Sweden	10	
Switzerland	10	
USA - OSHA	15	
United Kingdom	10	

Substance	Calcium Sulfate	
	Limit value - Eight hours	Limit value - Short term
	mg/m ³	mg/m ³
Austria	5 respirable aerosol	10 respirable aerosol
Belgium	10	
Denmark	5	
Germany (AGS)	6 respirable aerosol	
Germany (DFG)	4 inhalable aerosol	
	1,5 respirable aerosol	
Hungary	6 respirable aerosol	
Latvia	6 respirable	
Spain	10 respirable aerosol	
Switzerland	3 respirable aerosol	
USA - NIOSH	10 (1)	
	5 (2)	
	Remarks	
USA - NIOSH	(1) total dust (2) respirable aerosol	

Substance	Dust, mineral, respirable	
	Limit value - Eight hours	Limit value - Short term
	mg/m ³	mg/m ³
Belgium	3	
Denmark	5	10

8.1.2 Biological limit values:

None.

8.1.3 Appropriate engineering controls:

Local exhaust ventilation for indoor use.

Chimney filters for industrial use

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8.1.4 Additional exposure limits under the conditions of use:

DNEL/DMEL and PNEC-values:

DNELS:

Exposure route	Exposure pattern	DNEL (workers)
Inhalation	Acute systemic effects	5082 mg/m ³
	Long term systemic	21.17 mg/m ³

Exposure route	Exposure pattern	DNEL (general population)
Inhalation	Acute systemic effects	3811 mg/m ³
	Long term systemic	5.29 mg/m ³
Oral	Acute systemic effects	11.4 mg/kg bw/day
	Long term systemic	1.52 mg/kg bw/day

PNECS:

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
STP	100 mg/L

8.2 Exposure Control

8.2.1 Professional Exposure Control

Engineering measures

The working places must be properly aired.

When possible, install local aspirators and efficient system of total air replacement.

If these measures are not sufficient to keep the particle concentrations below the exposure limits, it will be necessary to use suitable respiratory protection apparatus.

Respiratory protection

If the conditions of use generate dust, use approved respiratory protection with filter P2.

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Hand protection

Wear protective gloves of textile/leather.

Eye protection

Safety glasses with full side shields or goggles are recommended.

Skin protection

Normal work clothes

8.2.2 Control of the environmental exposure

Do not disperse the product in the environment

9. Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Appearance		
Physical state:		Solid. Crystalline Powder
Odour:		neutral
pH (20 °C):		in delivery state: not applicable in aqueous solution: about pH 11
Melting point/freezing point:		1450°C
Boiling point:		Not applicable
Flash point:		Not applicable
Flammability:		Not flammable
Upper/lower flammability or explosive limits:		Not applicable
Vapour pressure:		Not applicable
Density (g/cm ³):		2,96 g/cm ³
Bulk density (kg/m ³):		0,70 kg/dm ³
Water solubility (20°C in g/l):		about 2 g/l
Partition coefficient n-Octanol/Water (log Po/w):		Product/Substance is inorganic.
Auto ignition temperature:		Not applicable
Decomposition Temperature (°C):		
into CaSO ₄ x ½ H ₂ O and H ₂ O	about 140°C	(about 413 K)
into CaSO ₄ and H ₂ O	about 700°C	(about 973 K)
into CaO and SO ₃	about 1000°C	(about 1273 K)
Viscosity		Not applicable
Explosive properties:		Not explosive
Oxidizing properties:		Not oxidizing
Dissociation constant		Not applicable

9.2 Other information

None

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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

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Relevant hazard class	Effect dose	Species	Method	Remark
Acute oral toxicity	LD50 > 1581 mg/kg bw	Rat.	OECD 420	
Acute dermal toxicity	n/a			No dermal toxicity envisaged due to low potential for absorption
Acute inhalative toxicity	LC50 > 2.61 mg/L	Rat	OECD 403	Maximum attainable dose
Skin corrosion/irritation	n/a	Rabbit	OECD 404	Not irritating
Serious eye damage/irritation	n/a	Rabbit	OECD 405	Not irritating
Respiratory or skin sensitization	n/a	Guinea pig	OECD 406	Not a skin sensitizer
Germ cell mutagenicity	n/a	In vitro tests	OECD 471 OECD 476	Not mutagenic
		Mouse	OECD 474	Not mutagenic
Carcinogenicity	n/a			No risk of carcinogenicity posed by calcium sulphate
Reproductive toxicity	NOAEL 790 mg/kg bw	Rat	OECD 422	No signs of reproductive toxicity observed
STOT single exposure	n/a			No organ toxicity observed in acute tests
STOT repeated exposure	n/a			It is considered to classify based on RCS content . STOT RE 2 (If calcium sulfate contains crystalline silica in respirable form >1 % - < 10 %.)
Aspiration hazard	n/a			No aspiration hazard envisaged

12. Ecological Information

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12.1 Toxicity

Aquatic toxicity	Effect dose	Exposure time	Species	Method	Evaluation	Remark
Acute fish toxicity	LC50 >79mg/L	96 h	Japanese rice fish	OECD 203	Harmless to fish up to the tested concentration.	LIMIT-test
Acute daphnia toxicity	EC50 >79 mg/L	48 h	Daphnia magna	OECD 202	Harmless to daphnia up to the tested concentration.	LIMIT-test
Acute algae toxicity	E50 > 79 mg/L	72 h	Selenastrum capricornutum	OECD 201	Harmless to algae up to the concentration tested.	LIMIT-test
Toxicity to STP microorganisms	EC 50 >790 mg/L	3 h	Activated sludge	OECD 209	Harmless to STP microorganisms	

After neutralisation, toxicity is no longer observed.

The product can hydrolyse into Calcium and Sulfate Ions.

The stated effect can be caused partly by the decomposition products.

The ecological data were measured on the hydrolysed product.

12.2 Persistence and degradability

Abiotic Degradation

Physical- and photo-chemical elimination:

The product hydrolyses quickly in the presence of water to:

Calcium and Sulfate Ions

The individual components are poorly eliminated from water.

No photo-chemical elimination.

Biodegradation:

The methods for determining the biological degradability are not applicable to inorganic substances.

Inorganic product which is not eliminable from water through biological cleaning processes.

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12.3 Bioaccumulative potential

Based on the n-octanol/water partition coefficient significant accumulation in organisms is not expected.

No indication to bioaccumulation potential.

The ecological data were measured on the hydrolysed product.

According to experiences this product is inert and not degradable biologically.

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:

According to the criteria of the European classification and labelling system, the substance/the product has not to be labelled as „dangerous for the environment“.

On the basis of existing data about the elimination/degradation and bioaccumulation potential longer term damage to the environment is unlikely.

The information about ecology refer to the main components.

13. Waste Disposal Considerations

Unused product, residues deriving from its use and empty packages have to be disposed according to the rules in force.

During handling adopt the precaution measures indicated in section 7 and 8.

14. Transport Information

Not classified as dangerous in terms of transport regulations

14.1 UN-Number: None.

14.2 UN proper shipping name: Not applicable.

14.3 Transport hazard class(es): Not applicable.

14.4 Packaging group: Not applicable.

14.5 Environmental hazards: None.

14.6 Special precautions for user: None.

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14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code: Not applicable.

15. Regulatory information

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

Labelling under directives 1272/2008 (EC) and 790/2009 and subsequent amendments;

Regulations	Cas	Substance
428/2009 ex CE 1334/2000 Annex.1	-	-
273/04 Tab.1 Cat.1	-	-
273/04 Tab.1 Cat.2	-	-
273/04 Tab.1 Cat.3	-	-
1907/2006 Annex XIV	-	-
1907/2006 (Substance SVHC)	-	-
552/2009 (amending Annex XVII of EC Reg. 1907/2006)	-	-
276/2010 (amending Annex XVII of EC Reg. CE 1907/2006)	-	-
Dir. 96/82/CE e Dir 105/2003/CE Annex 1 part 1	-	-
Dir. 96/82/CE e Dir. 105/2003/CE Annex 1 part 2	-	-

15.2 Chemical Safety Assessment:

For this substance is not provided a chemical safety assessment

16. Further Information

Caution advise (P)

P270 – Do not eat, drink or smoke when using this product.

P260 – Do not breath dust

P262 – Do not get in eyes, on skin, or on clothing

P305 +P351 +P338 – IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Caution advise (S)

S20: When using do not eat or drink

S21: When using do not smoke

S22: Do not breath dust

S24/25: Avoid contact with skin and eyes

S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice

Revision

This MSDS has been completely revised in accordance with regulations No. 1907/2006/EC, 1272/2008/EC and 453/2010/CE.

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Key to abbreviations and acronyms

ACIGH: American Conference of Governmental Industrial Hygienists
ADN: Accord européen relative au transport international des marchandises dangereuses par voies de navigation intérieures
ADR: Accord européen relative au transport international des marchandises dangereuses par route
CL 50: Lethal Concentration 50
CLP: Classification, Labelling and Packaging
CSR: Chemical Safety Report
DL 50: Lethal Dose 50
DNEL: Derived no effect level
IATA: International Air Transport Association
ICAO: International Civil Aviation Organization
IMDG: International Maritime Dangerous Goods code
PBT: Persistent, bioaccumulative and toxic
PNEC: Predicted no effect concentration
NOEC: No observed effect concentration
RID: Règlement concernant le transport International ferroviaire des marchandises Dangereuses
STEL: short term exposure limit
SCOEL: Scientific Committee on Occupational Exposure Limit Values
TWA: Time Weighted Average
UE: Unione Europea
vPvB: Very persistent very bioaccumulative

Main Bibliography

1. **IUCLID (International Uniform Chemical Information Database) of Calcium sulfate.**
2. **CSR of Calcium sulfate**

Informative Note

The product must not be used for applications other than those for which it is sold, without having obtained previous written instructions. The producer takes no responsibility for improper use.

Information supplied in this "Material Safety Data Sheet" is based on the best available knowledge and our experience, and it is not exhaustive. It is applied on the product exactly as it is, in case of mixture or compound make sure that no new danger can rise.

In any case people who handle the product must respect the current law and regulation related to the product, hygiene and security on work place.

The information contained in this form are a description of product characteristics for safety purpose, should not be considered as guarantee of the properties of the product itself.