

Material Safety Data Sheet – CNS 45 %

According to REACH Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 with amendments



Date: December 7th, 2018

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

1.1. Product identifier

Product form : Substance in aqueous solution
Trade name: Calcium nitrate 45% Liquid
Chemical name : Calcium nitrate
IUPAC name : Calcium dinitrate
EC no : 233-332-1
CAS No. : 10124-37-5
REACH registration No. : 01-2119495093-35
Formula : Ca(NO₃)₂
Synonyms : calcium dinitrate / calcium nitrate / calcium salpeter / calcium(II) nitrate / nitrate of lime / nitric acid, calcium salt
EC-FERTILISER : C.1.3 (only 51%)

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

1.2.1. Relevant identified uses

Main use category : Industrial use, Professional use, Consumer use
Use of the substance/preparation : Anti-corrosion agent. Cement: additive. Laboratory chemical. Chemical raw material. Chemical intermediate. Heat transfer fluid. Waste water treatment. Processing aid.
Use in textiles. Fertilizer. Anti-Freeze and de-icing products. Cleaning products. Use in cosmetics

Title	Sector of use	Product category	Process category	Article category	Environmental release	SPERC
Manufacturing of the substance (ES Ref.: CN 1)	SU3, SU8, SU9		PROC1, PROC2, PROC3, PROC8b, PROC14, PROC15		ERC1	
Industrial use for formulation of preparations, intermediate use and end-use (ES Ref.: CN 2)	SU3, SU10	PC0, PC4, PC9a, PC11, PC12, PC14, PC16, PC20, PC21, PC34, PC35, PC37, PC39	PROC1, PROC2, PROC3, PROC4, PROC5, PROC7, PROC8a, PROC8b, PROC9, PROC10, PROC13, PROC14, PROC15		ERC2, ERC4, ERC5, ERC6a, ERC6b, ERC6d, ERC7	
Professional use in formulation of preparations and end-use (ES Ref.: CN 3)	SU22	PC4, PC12, PC14, PC16, PC20, PC21, PC35, PC37	PROC1, PROC2, PROC5, PROC8a, PROC8b, PROC9, PROC10, PROC13, PROC15, PROC20		ERC8a, ERC8b, ERC8c, ERC8d, ERC8e, ERC9a, ERC9b	
Consumer end-use of fertilizers and other products (ES Ref.: CN 4)	SU21	PC4, PC12, PC35, PC39			ERC8a, ERC8b, ERC8d, ERC8e, ERC10a	

Full text of use descriptors: see section 16.

Remark relevant uses : Consult also the relevant exposure scenario in the appendix

1.2.2. Uses advised against

No additional information available

1.3. Supplier:

UCY business services & trading GmbH
Street: Am Villepohl 4
Post code / city: DE-53347 Alfter
Phone: +49 228 2428 732
Facsimile: +49 228 2428 731
E-mail: verkauf@ucy-energy.com

1.4. Emergency telephone number

In case of emergency contact the national emergency telephone number: UK and Ireland: 112 or 999

Country	Official advisory body	Address	Emergency number
Ireland (Republic of)	National Poisons Information Centre Beaumont Hospital	Beaumont Hospital Beaumont Road 9 Dublin	: +353 1 8379964
United Kingdom	Guy's & St Thomas' Poisons Unit Medical Toxicology Unit, Guy's & St Thomas' Hospital Trust	Avonley Road SE14 5ER London	0870 243 2241

Material Safety Data Sheet – CNS 45 %

According to REACH Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 with amendments



Date: December 7th, 2018

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

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

Acute Tox. 4 (Oral) H302 Eye Dam. 1 H318

Full text of H-phrases: see section 16

Adverse physicochemical, human health and environmental effects

No additional information available

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP) :



GHS05 GHS07
CLP Signal word : Danger

Hazard statements (CLP): H302 - Harmful if swallowed
H318 - Causes serious eye damage

Precautionary statements (CLP):

P264 - Wash hands thoroughly after handling.
P270 - Do not eat, drink or smoke when using this product
P280 - Wear protective gloves, protective clothing, face protection, eye protection.
P301+P312 - If swallowed, call a doctor if you feel unwell.
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310 - Immediately call a POISON CENTER or doctor/physician

2.3. Other hazards

Other hazards not contributing to the classification

SECTION 3: Composition/information on ingredients

3.1. Substances

Substance type : Mono-constituent
Name : Calcium nitrate, solution 45% - 51%
CAS No. : 10124-37-5
EC no : 233-332-1
EC index no : Not applicable

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Calcium nitrate, anhydrous	(CAS No.) 10124-37-5 (EC no) 233-332-1 (REACH-no) 01-2119495093-35	45 - 51,2	Ox. Sol. 3, H272 Acute Tox. 4 (Oral), H302 Eye Dam. 1, H318

Full text of R-, H- and EUH-phrases: see section 16.

3.2. Mixtures

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general: Check the vital functions. Unconscious: maintain adequate airway and respiration.
Respiratory arrest: artificial respiration or oxygen. Cardiac arrest: perform resuscitation. Victim conscious with laboured breathing: half-seated. Victim in shock: on his back with legs slightly raised. Vomiting: prevent asphyxia/aspiration pneumonia. Prevent cooling by covering the victim (no warming up). Keep watching the victim. Give psychological aid. Keep the victim calm, avoid physical strain. Depending on the victim's condition: doctor/hospital.

First-aid measures after inhalation : Remove to fresh air and keep at rest in a position comfortable for breathing.
Respiratory problems: consult a doctor/medical service.

First-aid measures after skin contact : Rinse with water. Soap may be used. Remove all contaminated clothing and footwear.

Material Safety Data Sheet – CNS 45 %

According to REACH Regulation (EC) No 1907/2006 of the European Parliament
and of the Council of 18 December 2006 with amendments



Date: December 7th, 2018

Take victim to a doctor if irritation persists. Wash contaminated clothing before reuse.
First-aid measures after eye contact : Immediately flush eyes with plenty of water (> 15min), occasionally lifting the upper and lower eyelids. Remove contact lenses, if present and easy to do. Continue rinsing. Take victim to an ophthalmologist.
First-aid measures after ingestion : Consult a doctor/medical service if you feel unwell. Rinse mouth with water.
Immediately after ingestion: give lots of water to drink. If swallowed, do NOT induce vomiting. Do not give an unconscious person anything to drink.

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

Symptoms/injuries after eye contact : Redness of the eye tissue. Irritation of the eye tissue.
Symptoms/injuries after ingestion : Nausea. Abdominal pain. After absorption of high quantities: methemoglobinemia, blue/grey discoloration of the skin, feeling of weakness, dizziness, respiratory difficulties.

4.3. Indication of any immediate medical attention and special treatment needed

Normally no immediate medical service and special treatment is needed. Follow the advices in chapter 4.1. The product can cause methemoglobinemia.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Water. Use fire extinguishing methods suitable to surrounding conditions. Preferably: water.
Unsuitable extinguishing media: No unsuitable extinguishing media known.

5.2. Special hazards arising from the substance or mixture

Fire hazard : Direct fire hazard: Non combustible.
Reactivity: Stable in use and storage conditions as recommended in item 7.

5.3. Advice for firefighters

Precautionary measures fire :Exposure to fire/heat: keep upwind. Exposure to fire/heat: consider evacuation.
Exposure to fire/heat: have neighbourhood close doors and windows.
Firefighting instructions :Dilute toxic gases with water spray.
Protection during firefighting :Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Ensure adequate air ventilation. Do not get in eyes, on skin, or on clothing.
Keep away from naked flames/heat.

6.1.1. For non-emergency personnel

Protective equipment : Wear protective gloves/protective clothing/eye protection as advised in section 8.
Emergency procedures : Mark the danger area. No naked flames. Keep containers closed. Wash contaminated clothes.
In case of hazardous reactions: keep upwind. In case of reactivity hazard: consider evacuation.

6.1.2. For emergency responders

Protective equipment : Wear protective gloves/protective clothing/eye protection as advised in section 8.

6.2. Environmental precautions

Stop leaks if possible. Dam up the liquid spill. Prevent spreading in sewers. Prevent soil and water pollution. Contain leaking substance, pump over in suitable containers. Turn leaking containers leak-side up to prevent the escape of liquid.
Notify authorities if product enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

For containment : Any spillage should be cleaned up immediately. Collect spill in closed and suitable containers for disposal. Take up rest of liquid spill into absorbent material sand, earth, vermiculite.
Scoop absorbed substance into closing containers.
Methods for cleaning up : Clean contaminated surfaces with an excess of water. Wash clothing and equipment after handling.
Other information : Dispose the product, depending on the degree and type of contamination, either as fertilizer or in an authorized waste disposal site.

6.4. Reference to other sections

See section 1 for emergency contact information.
See section 8 for information on appropriate personal protective equipment. See section 13 for additional waste treatment information.

Material Safety Data Sheet – CNS 45 %

According to REACH Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 with amendments



Date: December 7th, 2018

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Use sufficient ventilation. Do not get in eyes, on skin, or on clothing.

Wear protective gloves/protective clothing/eye protection as advised in section 8. Care for eyewashstations and security showers at the workplace. Avoid splashing.

Hygiene measures : Do not eat, drink or smoke during use. Always wash hands after handling the product. Remove contaminated clothing and protective equipment before entering eating areas.

Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Do not discharge the waste into the drain.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep preferably in the original container.

Incompatible materials : Keep away from iron. Do not use with copper/aluminium/zinc - risk of corrosion.

Storage temperature : -10 - 30 °C

Heat-ignition : Keep substance away from: heat sources.

Prohibitions on mixed storage: Keep substance away from: combustible materials, reducing agents, (strong) acids, (strong) bases, organic materials, metals.

Storage area : Store in dry, cool, well-ventilated area. Keep out of direct sunlight.

Provide for a tub to collect spills.

Special rules on packaging : Meet the legal requirements. correctly labelled. closing.

Secure fragile packagings in solid containers.

Packaging materials : Suitable material: synthetic material, glass, stainless steel.

Material to avoid: aluminium. Iron, copper.

7.3. Specific end use(s)

Consult the identified uses in the annex of this MSDS.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Calcium nitrate solution 45% / 51% (10124-37-5)

DNEL/DMEL (Workers)	
Long-term - systemic effects, dermal	13,9 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	98 mg/m ³
DNEL/DMEL (General population)	
Long-term - systemic effects, oral	8,33 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	29 mg/m ³
Long-term - systemic effects, dermal	8,33 mg/kg bodyweight/day
PNEC (Water)	
PNEC aqua (freshwater)	0,45 mg/l
PNEC aqua (marine water)	0,045 mg/l
PNEC aqua (intermittent, freshwater)	4,5 mg/l
PNEC (STP)	
PNEC sewage treatment plant	18 mg/l

8.2. Exposure controls

Appropriate engineering controls : No particular/specific measures required. Good practice advice:

Ensure good ventilation of the work station.

Care for eyewashstations and security showers at the workplace.

Personal protective equipment :



Hand protection : Gloves. Good resistance gives: Nitrile rubber (NBR) .

Permeation time: minimum >480min long term exposure; material / thickness [mm]: 0.38 mm.

Material selection gloves : Take advice to your gloves' supplier. Replace damaged gloves.

Eye protection : Safety glasses.

Skin and body protection : Normal working clothes are suitable.

Respiratory protection : Ensure adequate air ventilation.

Material Safety Data Sheet – CNS 45 %

According to REACH Regulation (EC) No 1907/2006 of the European Parliament
and of the Council of 18 December 2006 with amendments



Date: December 7th, 2018

Mist formation: aerosol mask with filter type P2.

Environmental exposure controls : In some cases process modifications will be necessary to reduce emissions to acceptable levels.

Emissions from ventilation or work process equipment should be checked to ensure they comply with legislation.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	: Liquid
Appearance	: Liquid.
Molecular mass	: 164,09 g/mol
Colour	: Colourless.
Odour	: Odourless.
Odour threshold	: No data available
pH	: 2,5 - 5
Melting point	: +/- 560 °C (anhydrous form)
Crystallization temperature	: < -15 °C
Boiling point	: Not applicable
Flash point	: Not applicable
Vapour pressure	: +/- 2300 hPa (as water)
Density (25°C)	: 1,41 kg/l (45%) - 1,51 kg/l (51%)
Solubility	: Complete soluble in water.
Log Pow	: No data available
Log Kow	: Not relevant as the substance is inorganic, considered to be low (based on high water solubility)
Decomposition temperature	: No data available
Explosive properties	: not explosive.
Oxidising properties	: not oxidising. The anhydrous product is considered to be an oxidizer.

9.2. Other information

Specific conductivity : +/- 0,96 mS/cm (51%, 25°C)

VOC content : Not applicable

SECTION 10: Stability and reactivity

10.1. Reactivity

Stable in use and storage conditions as recommended in item 7.

10.2. Chemical stability

The product is stable at normal handling- and storage conditions.

10.3. Possibility of hazardous reactions

Thermal decomposition can lead to the escape of irritating gases and vapours (oxides of nitrogen). Decontamination with reducing agents or strong acids can cause formation of toxic gases (oxides of nitrogen). It can enhance combustion of other substances.

10.4. Conditions to avoid

Avoid high temperatures. Temperatures lower than -10°C. Contamination with combustible materials.

10.5. Incompatible materials

May be corrosive to some metals. Keep substance away from: reducing agents, combustible materials.

10.6. Hazardous decomposition products

On heating/burning: release of toxic and corrosive gases/vapours nitrous vapours.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Harmful if swallowed.

Calcium nitrate solution 45% / 51% (10124-37-5)

LD50 oral rat : 300 - 2000 mg/kg bodyweight (OECD 423)

LD50 dermal rat : > 2000 mg/kg bodyweight (OECD 402 with potassium pentacalcium nitrate decahydrate)

LC50 inhalation rat (mg/l) : (no data, low vapour pressure)

ATE (oral) : 500 mg/kg

Skin corrosion/irritation : Not classified

pH: 2,5 - 5

Explanation skin corrosion/irritation: (OECD 404, with ammonium nitrate)

Serious eye damage/irritation : Causes serious eye damage. pH: 2,5 - 5

Explanation serious eye damage/irritation: (OECD 405, with calcium nitrate tetrahydrate) Respiratory or skin sensitisation : Not classified

Explanation respiratory or skin sensitisation: (OECD 429, with sodium nitrate)

Germ cell mutagenicity : Not classified

Material Safety Data Sheet – CNS 45 %

According to REACH Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 with amendments



Date: December 7th, 2018

Explanation germ cell mutagenicity: Negative (OECD 471, with nitric acid ammonium calcium salt)
Carcinogenicity : Not classified
Explanation carcinogenicity: No data
Reproductive toxicity : Not classified
Explanation reproductive toxicity: Oral 28-day NOAEL \geq 1500 mg/kg bw/day (OECD 422, with potassium nitrate)

Specific target organ toxicity (single exposure) : Not classified
Specific target organ toxicity (repeated exposure): Not classified
Aspiration hazard : Not classified

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : Classification concerning the environment: not applicable.
Ecology - air : Not dangerous for the ozone layer (Council Regulation (EC) no 1005/2009).
TA-Luft Klasse 5.2.1.
Ecology - water : Mild water pollutant (surface water). Ground water pollutant.
For Flanders: maximum concentration in drinking water: 270 mg/l (calcium)(M.B. 28/1/2003). Maximum concentration in drinking water: 50 mg/l (nitrate) (Directive 98/83/EC).
Not harmful to fishes (LC50(96h) >1000 mg/l). May cause eutrophication.

Calcium nitrate solution 45% / 51% (10124-37-5)

LC50 fishes 1 1378 mg/l 96-h (OECD 203, with potassium nitrate)
EC50 Daphnia 1 490 mg/l 48-h (no guideline followed, with potassium nitrate)
ErC50 (algae) > 1700 mg/l 10-d (seawater, no guideline followed, performed with potassium nitrate)
NOEC (acute) 180 mg/l 3-h EC50: >1000 mg/l (OECD 209, with sodium nitrate)

12.2. Persistence and degradability

Calcium nitrate solution 45% / 51% (10124-37-5)
Persistence and degradability According to literature, easily degradable in the soil.
Biochemical oxygen demand (BOD) Not applicable
Chemical oxygen demand (COD) Not applicable
ThOD Not applicable
BOD (% of ThOD) Not applicable
Biodegradation The average biodegradation rate in a wastewater plant at 20 °C (dissolved solid/day): 70 g N/kg

12.3. Bioaccumulative potential

Calcium nitrate solution 45% / 51% (10124-37-5)
Log Kow Not relevant as the substance is inorganic, considered to be low (based on high water solubility)
Bioaccumulative potential Slightly or not bioaccumulative.

calcium nitrate, anhydrous (10124-37-5)

Bioaccumulative potential According to literature, not bioaccumulative.

12.4. Mobility in soil

Calcium nitrate solution 45% / 51% (10124-37-5)
Ecology - soil Soluble in water. Low potential for adsorption (based on substance properties).

12.5. Results of PBT and vPvB assessment

No additional information available

12.6. Other adverse effects

Other information : No other effects known.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

EURAL code : 06 03 14 - solid salts and solutions other than those mentioned in 06 03 11 and 06 03 13
Depending on branch of industry and production process, also other EURAL codes may be applicable
Regional legislation (waste) : Disposal must be done according to official regulations.
Waste treatment methods : Dispose the product, depending on the degree and type of contamination, either as fertilizer or in an authorized waste disposal site. Empty and rinsed containers can be disposed as non-hazardous material or be returned for recycling.
Waste disposal recommendations : Do not discharge into drains or the environment. Care should be taken when handling emptied containers that have not been cleaned or rinsed out.

SECTION 14: Transport information

No dangerous good in sense of transport regulations.

Material Safety Data Sheet – CNS 45 %

According to REACH Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 with amendments



Date: December 7th, 2018

SECTION 15: Regulatory information

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

15.1.1. EU-Regulations

No Annex XVII restrictions

Contains no REACH candidate substance

VOC content : Not applicable

EURAL code : 06 03 14

Other regulations, restrictions and prohibition regulations: Substance is not listed in Annex I of directive 67/548/EEC and Annex VI of directive (EG) nr. 1272/2008. Council Directive 91/676/EEC of 12 December 1991 concerning the protection of waters against pollution caused by nitrates from agricultural sources.

15.1.2. National regulations

No additional information available

15.2. Chemical safety assessment

A chemical safety assessment has been carried out

SECTION 16: Other information

Version : 5.12
Revision date : 18-04-2016
Date of issue : 16-10-2008
Supersedes : 01-06-2015
Indication of changes : Revised safety data sheet in accordance with commission regulation (EU) No 2015/830.
Data sources : ECHA Website: Information on Registered Substances.
Handbook of Chemistry and Physics CRC Press Inc. Information from suppliers.
Abbreviations and acronyms : REACH = Registration, evaluation and authorisation of chemicals.
CLP = Classification, labelling and packaging. DNEL = Derivative No Effect Level.
PNEC = Predicted No Effect Concentration.
n.a. = not applicable.

Training advice : Before using/handling the product one must read carefully the MSDS.

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

Acute Tox. 4 (Oral) Acute toxicity (oral) Category 4

Eye Dam. 1 Serious eye damage/eye irritation Category 1

Ox. Sol. 3 Oxidising solids Category 3

H272 May intensify fire; oxidizer

H302 Harmful if swallowed

H318 Causes serious eye damage

ERC1 Manufacture of substances

ERC10a Wide dispersive outdoor use of long-life articles and materials with low release

ERC2 Formulation of preparations

ERC4 Industrial use of processing aids in processes and products, not becoming part of articles

ERC5 Industrial use resulting in inclusion into or onto a matrix

ERC6a Industrial use resulting in manufacture of another substance (use of intermediates)

ERC6b Industrial use of reactive processing aids

ERC6d Industrial use of process regulators for polymerisation processes in production of resins, rubbers, polymers

ERC7 Industrial use of substances in closed systems

ERC8a Wide dispersive indoor use of processing aids in open systems

ERC8b Wide dispersive indoor use of reactive substances in open systems

ERC8c Wide dispersive indoor use resulting in inclusion into or onto a matrix

ERC8d Wide dispersive outdoor use of processing aids in open systems

ERC8e Wide dispersive outdoor use of reactive substances in open systems

ERC9a Wide dispersive indoor use of substances in closed systems

ERC9b Wide dispersive outdoor use of substances in closed systems

PC0 Other (use UCN codes: see last row)

PC11 Explosives

PC12 Fertilizers

PC14 Metal surface treatment products, including galvanic and electroplating products

PC16 Heat transfer fluids

PC20 Products such as ph-regulators, flocculants, precipitants, neutralization agents

PC21 Laboratory chemicals

PC34 Textile dyes, finishing and impregnating products; including bleaches and other processing aids

PC35 Washing and cleaning products (including solvent based products)

PC37 Water treatment chemicals

PC39 Cosmetics, personal care products

PC4 Anti-Freeze and de-icing products

PC9a Coatings and paints, thinners, paint removers

Material Safety Data Sheet – CNS 45 %

According to REACH Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 with amendments



Date: December 7th, 2018

PROC1 Use in closed process, no likelihood of exposure
PROC10 Roller application or brushing
PROC13 Treatment of articles by dipping and pouring
PROC14 Production of preparations or articles by tableting, compression, extrusion, pelletisation
PROC15 Use as laboratory reagent
PROC2 Use in closed, continuous process with occasional controlled exposure
PROC20 Heat and pressure transfer fluids in dispersive, professional use but closed systems
PROC3 Use in closed batch process (synthesis or formulation)
PROC4 Use in batch and other process (synthesis) where opportunity for exposure arises
PROC5 Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)
PROC7 Industrial spraying
PROC8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities
PROC8b Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
PROC9 Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
SU10 Formulation [mixing] of preparations and/or re-packaging (excluding alloys)
SU21 Consumer uses: Private households (= general public = consumers)
SU22 Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
SU3 Industrial uses: Uses of substances as such or in preparations* at industrial sites
SU8 Manufacture of bulk, large scale chemicals (including petroleum products)
SU9 Manufacture of fine chemicals

Company disclaimer

The information provided in this safety data sheet is correct to the best of our knowledge, information, and belief at the date of its publication. The information given is designed only as guidance for safe handling, use, processing, storage, transportation, disposal, and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

1. Exposure scenario CN 1

Manufacturing of the substance ES Ref.: CN 1
ES Type: Worker
Version: 2.0
Revision date: 01-08-2011
Association ref code: ES 1 Calcium nitrate
Use descriptors PROC1, PROC2, PROC3, PROC8b, PROC14, PROC15
SU3, SU8, SU9
ERC1
Processes, tasks, activities covered Industrial use

2. Operational conditions and risk management measures

2.1 Contributing scenario controlling worker exposure
(PROC1, PROC2, PROC3, PROC8b, PROC14, PROC15)
PROC1: Use in closed process, no likelihood of exposure
PROC2: Use in closed, continuous process with occasional controlled exposure
PROC3: Use in closed batch process (synthesis or formulation)
PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
PROC14: Production of preparations or articles by tableting, compression, extrusion, pelletisation
PROC15: Use as laboratory reagent
Product characteristics
Physical form of product Substance in aqueous solution
Concentration of substance in product > 45 %
Operational conditions
Amounts used Not applicable
Frequency and duration of use Covers daily exposures up to 8 hours (unless stated differently)
Human factors not influenced by risk management Not applicable
Other given operational conditions affecting workers
Exposure Indoor use
Risk Management Measures
Technical conditions and measures at process level
(source) to prevent release Not applicable
Technical conditions and measures to control dispersion from source towards the worker Ensure that there is a suitable ventilation system
Ensure containment of the emission source

Material Safety Data Sheet – CNS 45 %

According to REACH Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 with amendments



Date: December 7th, 2018

Organisational measures to prevent /limit releases, Not applicable
dispersion and exposure

Conditions and measures related to personal protection, hygiene and health evaluation Wear safety glasses

2.2 Contributing scenario controlling environmental exposure
ERC1: Manufacture of substances

3. Exposure estimation and reference to its source

Information for contributing exposure

scenario: 2.1

- A qualitative approach was used to conclude safe use for workers. The leading toxicological effect is eye irritation (local endpoint), for which no DNEL can be derived as no dose-response information is available. Although acute orally harmful, the acute oral route is not considered a relevant exposure route in the exposure scenarios described and no peak exposure is possible via this route. The substance did not show any systemic effects in the repeated dose studies and thus a quantitative assessment for systemic toxicity is not considered relevant for this substance

Information for contributing exposure

scenario: 2.2

- An environmental assessment has not been performed as the substance does not meet the criteria for being classified as dangerous for the environment

4. Guidance to DU to evaluate whether he works inside the boundaries set by the ES

4.1. Health

Guidance - Health

- Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in section 2 are implemented.
For more details or further information on the assumptions contained in this Exposure Scenario, contact the supplier

4.2. Environment

Guidance - Environment No additional risk management measures required

5. Additional good practice advice beyond the REACH CSA

Additional good practice advice beyond the REACH

CSA

- Ensure containment of the emission source. Limit exposition time and number of exposed worker to product. Segregation of the emitting process. Ensure that there is a suitable ventilation system. Minimisation of manual phases. Avoid contact with contaminated tools and objects. Regular cleaning of equipment, work area and clothing. Supervision in place to check that the RMMs in place are being used correctly and OCs followed. Handle in accordance with good industrial hygiene and safety practice

1. Exposure scenario CN 2

Industrial use for formulation of preparations, intermediate use and end-use

ES Ref.: CN 2

ES Type: Worker

Version: 2.0

Revision date: 01-08-2011

Association ref code: ES 2 Calcium nitrate

Use descriptors PROC1, PROC2, PROC3, PROC4, PROC5, PROC7, PROC8a, PROC8b, PROC9, PROC10, PROC13, PROC14, PROC15

PC0, PC4, PC9a, PC11, PC12, PC14, PC16, PC20, PC21, PC34, PC35, PC37, PC39

SU3, SU10

ERC2, ERC4, ERC5, ERC6a, ERC6b, ERC6d, ERC7

Processes, tasks, activities covered Industrial use

2. Operational conditions and risk management measures

2.1 Contributing scenario controlling worker exposure

(PROC1, PROC2, PROC3, PROC4, PROC5, PROC7, PROC8a, PROC8b, PROC9, PROC10, PROC13, PROC14, PROC15)

Material Safety Data Sheet – CNS 45 %

According to REACH Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 with amendments



Date: December 7th, 2018

PROC1: Use in closed process, no likelihood of exposure
PROC2: Use in closed, continuous process with occasional controlled exposure
PROC3: Use in closed batch process (synthesis or formulation)
PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises
PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)
PROC7: Industrial spraying
PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities
PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
PROC10: Roller application or brushing
PROC13: Treatment of articles by dipping and pouring
PROC14: Production of preparations or articles by tableting, compression, extrusion, pelletisation
PROC15: Use as laboratory reagent
Product characteristics
Physical form of product
- Substance in aqueous solution
Concentration of substance in product
- > 25 %
Operational conditions
Amounts used
- Not applicable
Frequency and duration of use
- Covers daily exposures up to 8 hours (unless stated differently)
Human factors not influenced by risk management Not applicable
Other given operational conditions affecting workers exposure
- Indoor use
Risk Management Measures
Technical conditions and measures at process level (source) to prevent release
- Not applicable
Technical conditions and measures to control dispersion from source towards the worker
- Ensure containment of the emission source.
Ensure that there is a suitable ventilation system
Organisational measures to prevent /limit releases, dispersion and exposure
- Not applicable
Conditions and measures related to personal protection, hygiene and health evaluation
- Wear safety glasses

2.2 Contributing scenario controlling environmental exposure
ERC2: Formulation of preparations
ERC4: Industrial use of processing aids in processes and products, not becoming part of articles
ERC5: Industrial use resulting in inclusion into or onto a matrix
ERC6a: Industrial use resulting in manufacture of another substance (use of intermediates)
ERC6b: Industrial use of reactive processing aids
ERC6d: Industrial use of process regulators for polymerisation processes in production of resins, rubbers, polymers
ERC7: Industrial use of substances in closed systems

3. Exposure estimation and reference to its source

Information for contributing exposure

scenario: 2.1

- A qualitative approach was used to conclude safe use for workers.
The leading toxicological effect is eye irritation (local endpoint), for which no DNEL can be derived as no dose-response information is available. Although acute orally harmful, the acute oral route is not considered a relevant exposure route in the exposure scenarios described and no peak exposure is possible via this route. The substance did not show any systemic effects in the repeated dose studies and thus a quantitative assessment for systemic toxicity is not considered relevant for this substance

Material Safety Data Sheet – CNS 45 %

According to REACH Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 with amendments



Date: December 7th, 2018

Information for contributing exposure scenario: 2.2

- An environmental assessment has not been performed as the substance does not meet the criteria for being classified as dangerous for the environment

4. Guidance to DU to evaluate whether he works inside the boundaries set by the ES

4.1. Health

Guidance - Health

- Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in section 2 are implemented

4.2. Environment

Guidance - Environment No additional risk management measures required

5. Additional good practice advice beyond the REACH CSA

Additional good practice advice beyond the REACH CSA

- Ensure containment of the emission source. Limit exposition time and number of exposed worker to product. Segregation of the emitting process. Ensure that there is a suitable ventilation system. Minimisation of manual phases. Avoid contact with contaminated tools and objects. Regular cleaning of equipment, work area and clothing. Supervision in place to check that the RMMs in place are being used correctly and OCs followed. Training staff on good practice. Handle in accordance with good industrial hygiene and safety practice

1. Exposure scenario CN 3

Professional use in formulation of preparations and end-use

ES Ref.: CN 3

ES Type: Worker

Version: 2.0

Revision date: 01-08-2011

Association ref code: ES 3 Calcium nitrate

Use descriptors PROC1, PROC2, PROC5, PROC8a, PROC8b, PROC9, PROC10, PROC13, PROC15, PROC20

PC4, PC12, PC14, PC16, PC20, PC21, PC35, PC37 SU22

ERC8a, ERC8b, ERC8c, ERC8d, ERC8e, ERC9a, ERC9b

Processes, tasks, activities covered Professional use

2. Operational conditions and risk management measures

2.1 Contributing scenario controlling worker exposure

(PROC1, PROC2, PROC3, PROC4, PROC5, PROC7, PROC8a, PROC8b, PROC9, PROC10, PROC13, PROC14, PROC15)

PROC1: Use in closed process, no likelihood of exposure

PROC2: Use in closed, continuous process with occasional controlled exposure

PROC3: Use in closed batch process (synthesis or formulation)

PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises

PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)

PROC7: Industrial spraying

PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities

PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities

PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)

PROC10: Roller application or brushing

PROC13: Treatment of articles by dipping and pouring

PROC14: Production of preparations or articles by tableting, compression, extrusion, pelletisation

PROC15: Use as laboratory reagent

Product characteristics

Physical form of product Substance in aqueous solution

Concentration of substance in product > 25 %

Operational conditions

Amounts used Not applicable

Frequency and duration of use Covers daily exposures up to 8 hours (unless stated differently)

Human factors not influenced by risk management Not applicable

Other given operational conditions affecting workers exposure

- Indoor/Outdoor use

Material Safety Data Sheet – CNS 45 %

According to REACH Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 with amendments



Date: December 7th, 2018

Risk Management Measures

Technical conditions and measures at process level (source) to prevent release

- Not applicable

Technical conditions and measures to control dispersion from source towards the worker

- Ensure containment of the emission source
- Ensure that there is a suitable ventilation system
- Avoid splashing. Use specific dispensers and pumps specifically designed to prevent splashes/spills/exposure to occur

Organisational measures to prevent /limit releases, dispersion and exposure

- Not applicable

Conditions and measures related to personal protection, hygiene and health evaluation

- Wear safety glasses

2. Operational conditions and risk management measures (continue)

2.2 Contributing scenario controlling environmental exposure

ERC2:Formulation of preparations

ERC4:Industrial use of processing aids in processes and products, not becoming part of articles

ERC5:Industrial use resulting in inclusion into or onto a matrix

ERC6a:Industrial use resulting in manufacture of another substance (use of intermediates)

ERC6b:Industrial use of reactive processing aids

ERC6d:Industrial use of process regulators for polymerisation processes in production of resins, rubbers, polymers

ERC7:Industrial use of substances in closed systems

3. Exposure estimation and reference to its source

Information for contributing exposure

scenario: 2.1

- A qualitative approach was used to conclude safe use for workers. The leading toxicological effect is eye irritation (local endpoint), for which no DNEL can be derived as no dose-response information is available. Although acute orally harmful, the acute oral route is not considered a relevant exposure route in the exposure scenarios described and no peak exposure is possible via this route. The substance did not show any systemic effects in the repeated dose studies and thus a quantitative assessment for systemic toxicity is not considered relevant for this substance

Information for contributing exposure scenario: 2.2

- An environmental assessment has not been performed as the substance does not meet the criteria for being classified as dangerous for the environment

4. Guidance to DU to evaluate whether he works inside the boundaries set by the ES

4.1. Health

Guidance - Health

- Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in section 2 are implemented

4.2. Environment

Guidance - Environment No additional risk management measures required

5. Additional good practice advice beyond the REACH CSA

Additional good practice advice beyond the REACH CSA

- Ensure containment of the emission source. Limit exposition time and number of exposed worker to product. Segregation of the emitting process. Ensure that there is a suitable ventilation system.Minimisation of manual phases. Avoid contact with contaminated tools and objects. Regular cleaning of equipment, work area and clothing. Supervision in place to check that the RMMs in place are being used correctly and OCs followed. Training staff on good practice.Handle in accordance with good industrial hygiene and safety practice

1. Exposure scenario CN 4

Consumer end-use of fertilizers and other products

ES Ref.: CN 4

ES Type: Consumer

Version: 2.0

Revision date: 01-08-2011

Material Safety Data Sheet – CNS 45 %

According to REACH Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 with amendments



Date: December 7th, 2018

Company ES code: CN 4

Use descriptors PC4, PC12, PC35, PC39 SU21 ERC8a, ERC8b, ERC8d, ERC8e, ERC10a

Processes, tasks, activities covered Consumer use

2. Operational conditions and risk management measures

2.1 Contributing scenario consumer end-use

(PC4, PC12, PC35, PC39)

PC4: Anti-Freeze and de-icing products

PC12: Fertilizers

PC35: Washing and cleaning products (including solvent based products)

PC39: Cosmetics, personal care products

Product characteristics

Physical form of product Substance in aqueous solution

Concentration of substance in product < 25 %

Operational conditions

Amounts used Not applicable

Frequency and duration of use Not applicable

Human factors not influenced by risk management Not applicable

Other given operational conditions affecting consumers exposure

- Indoor/Outdoor use

Risk Management Measures

Conditions and measures related to information and behavioural advice to consumers

- Avoid splashing

Conditions and measures related to personal protection, hygiene and health evaluation

- Wear safety glasses > 10 %
- No personal protection needed < 10 %

Other risk management measures Instructions addressed to the consumer via product labelling

2.2 Contributing scenario controlling environmental exposure

ERC8a: Wide dispersive indoor use of processing aids in open systems

ERC8b: Wide dispersive indoor use of reactive substances in open systems

ERC8d: Wide dispersive outdoor use of processing aids in open systems

ERC8e: Wide dispersive outdoor use of reactive substances in open systems

ERC10a: Wide dispersive outdoor use of long-life articles and materials with low release

3. Exposure estimation and reference to its source

Information for contributing exposure scenario: 2.1

- A qualitative approach was used to conclude safe use for workers. The leading toxicological effect is eye irritation (local endpoint), for which no DNEL can be derived as no dose-response information is available. Although acute orally harmful, the acute oral route is not considered a relevant exposure route in the exposure scenarios described and no peak exposure is possible via this route. The substance did not show any systemic effects in the repeated dose studies and thus a quantitative assessment for systemic toxicity is not considered relevant for this substance

Information for contributing exposure scenario: 2.2

- An environmental assessment has not been performed as the substance does not meet the criteria for being classified as dangerous for the environment

4. Guidance to DU to evaluate whether he works inside the boundaries set by the ES

4.1. Health

Guidance - Health Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in section 2 are implemented

4.2. Environment

Guidance - Environment No additional risk management measures required