



MATERIAL SAFETY DATA SHEET
No FOSFAN/01/2010
Single Superphosphate - SSP
Version 02
according to Regulation (EC) 1907/2006

Date of issue: 15.05.2015

Date of revision: 01.06.2015

1. Identification of the substance and the company

1.1. Identification of the substance

Name	Single Superphosphate Fertilizer - SSP
Commercial name	Single Superphosphate
Synonyms	SSP, Superphosphate, Single Superphosphate
Composition of the fertilizer	Composition – see p. 3, 16
Molecular formula	not applicable
Molecular weight range	not applicable
Description	Substance obtained by treating phosphate rock with sulfuric acid or a mixture of sulfuric and phosphoric acids. Composed primarily of calcium phosphates and calcium sulfate.
CAS number	8011-76-5
EC number (EINCS)	232-379-5
Registration number	01-2119488967-11-0022

1.2. Significant identified uses of the substance and uses advised against

Single superphosphate is used as a fertilizer, as a component of fertilizer mixtures, as an intermediate in manufacture of another substance, as ph-regulator, flocculant, precipitant, neutralization agent, antibacterial aid.
No uses advised against.

1.3. Identification of the issuer of the Mineral Safety Data Sheet

Manufacturer/Supplier	FOSFAN S.A. ul. Nad Odrą 44/65 71-820 Szczecin, POLAND Phone: +4891 44 55 600 Fax: +48 91 44 55 610 Email: biuro@fosfan.pl
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Person responsible for the MSDS: Małgorzata Kucharska, Laboratory Manager
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1.4. Emergency telephone

Emergency telephone number: +48 91 44 55 633

2. Hazards identification

2.1. Classification of the substance.

Human health hazards

Skin

Dermal abrasion is possible with prolonged contact.

Eyes

May cause serious irritation of eyes.

Ingestion

Small quantities ingested – non toxic. Ingestion of big quantities leads to gastrointestinal disorders.

Respiration

High concentration of dust in air may cause irritation of nose and respiratory tract leading to sore throat and cough.

Environment hazards

Due to a content of phosphates, significant spills of the substance may cause adverse changes in aquatic ecosystems such as eutrophication of closed reservoirs and ground or surface waters pollution (see section 12).

Hazard category code – Eye Dam. 1

According to Regulation (EP) and Council (EC) No 1272/2008 of. 16.12.2008 (CLP)

Hazard category phrases H:

H318: Causes serious eye damage.

Precautionary statements P:

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

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.

2.2. Labeling

GHS hazard pictogram: **GHS05**



Signal word:
"Danger"

Hazard category phrases H:
H318: Causes serious eye damage.

Precautionary statements P:
P280: Wear protective gloves/protective clothing/eye protection/face protection.

2.3. Other hazards

Surface spreading may produce dust that may cause irritation of respiratory tract, throat and skin.

3. Composition/information on ingredients

3.1. Substance

Constituents of Single Superphosphate – multi constituent substance

Constituent	EC number (EINCS)	CAS number	Typical concentration	Concentration range
Calcium sulfate	231-900-3	7778-18-9 (anhydrous) 10101-41-4 (dihydrate)	ca. 61 % (w/w)	>= 31.0 — <= 65.0 % (w/w)
Calcium bis(dihydrogenorthophosphate)	231-837-1	7758-23-8	ca. 26 % (w/w)	>= 23.0 — <= 45.0 % (w/w)

Impurities

Impurity	EC number	CAS number	Typical concentration	Concentration range
Fluorapatite Ca ₅ F(PO ₄) ₃	215-144-1	1306-05-4	ca. 6 % (w/w)	>= 0.1 — <= 15.0 % (w/w)
Calcium Hydrogenorthophosphate	231-826-1	7758-93-9	ca. 3 % (w/w)	>= 0.1 — <= 15.0 % (w/w)
Orthophosphoric acid	231-633-2	7664-38-2	ca. 4 % (w/w)	>= 0.1 — <= 5.0 % (w/w)

4. First aid measures

4.1. Description of first aid measures

4.1.1. Inhalation: Remove from dusty atmosphere to a fresh air. If not breathing, give artificial respiration and call a physician.

4.1.2. Skin contact: Wash with soap and water. Consult a physician if symptoms occur.

4.1.3. Eye contact: check and remove contact lenses, rinse with plenty of water for at least 10 minutes, call a physician if symptoms occur.

4.1.4. Ingestion: Do not induce vomits. Never give anything by mouth to an unconscious person, call a physician if symptoms occur.

4.2. The most important acute and delayed symptoms and exposure effects.

No acute exposure effects. Insignificant exposure effects in case of thermal decomposition. Irritation of respiratory tract, skin and eyes may occur. If quoted symptoms occur contact a physician.

4.3. Recommendations on immediate assistance of a physician and a specific handling of the victim.

Inhalation: remove a victim from a dusty area, let the victim rest even if symptoms do not occur, contact a physician immediately.

Skin contact: rinse the contaminated area with plenty of cold water, contact a physician.

Eye contact: remove a victim from a dusty area, rinse eyes with plenty of water.

Remarks for a physician: There is no specific antidote.

5. Fire-fighting measures

5.1. Extinguishing media

Suitable: any media as appropriate for combustibles in the area. Suitable media: CO₂, extinguishing powder, water jet. Larger fire to be extinguished with foam. Single superphosphate is not flammable when coming into contact with an ignition source, with water or with air.

Unsuitable: none.

5.2. Specific hazards arising from the substance:

Hazardous decomposition products at a very high temperature: sulfur oxides and phosphorus oxides. In case of acrid smoke **stand facing the fire and** always turn your back on the wind.

The substance itself is inflammable.



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5.3. Information for fire brigade
Firemen's special equipment:: suitable protection facilities, respirators (SCBA), positive pressure respirators and gas-proof clothing.
Remark: Not explosive in normal conditions.
Keep residues from entering waterways.

6. Accidental release measures
6.1. Personal protection measures, protective equipment and emergency procedures.
6.1.1. Persons off a rescue team
Entering the contaminated area wear protective equipment: goggles, dust masks (half mask with dust filter P-1), gloves and protective clothing.
6.1.2. Members of a rescue team
Appropriate protective measures as recommended in section 6.1.1.
6.2. Environmental precautions
Store in roofed area on a hardened impermeable floor, protect against penetrating into waterways and drains. Do not indicate bioaccumulation and adsorption to soil.
6.3. Cleaning up methods and materials.
Cleaning up: Scoop up dry material for further fertilizer production or for disposal. Keep indoor area well ventilated. Avoid creating dust. Avoid dusts inhalation.
6.4. References to other sections.
See also section 8.2. and section 13.

7. Handling and storage
7.1. Precautions for safe handling
7.1.1. Avoid creating dust. Avoid contact with eyes. Protect spoils against penetrating into soil and surface waters. When longer handling: wear suitable protection clothes, use protective gloves and goggles.
7.1.2. Do not eat and drink in the worksite. Do not smoke. Before entering any canteen area remove protective equipment, change clothes and wash hands.
Comply with general rules of industrial safety. Do not pour into drains.
7.2. Conditions for safe storage incompatible materials.
Store in bulk or in bags on a hardened impermeable floor in roofed, well ventilated and dry area, away from heat and fire. Keep away from other chemicals – acids, alkalis, ammonium nitrate and urea (contact with these substances may produce nitrogen oxides).
Clear and legible labeling.
Water supply points, eye rinse facilities and shower should be installed in workplaces' area.
7.3. Specific end uses.
Use as a fertilizer, constituent of fertilizer mixtures and intermediate.

8. Exposure controls/personal protection

8.1. Exposure limit values

Name of the component	Exposure limit values. Threshold limit value depending on the time of exposure during one shift (8h/day).	
	[mg/m ³]	
	OEL-TWA	OEL-STEL
Calcium sulfate (total dust)	10	
Calcium bis(dihydrogenorthophosphate) (total dust)	10	
Calcium Hydrogenorthophosphate (total dust)	10	
Fluorapatite (total dust /respirable dust)	6/2	
Orthophosphoric acid	1	2

Lp.	Substance name	CAS/EC number	Indicative occupational limit values [mg/m ³]	
			8h	short-term
1	Orthophosphoric acid	7664-38-2/231-633-2	1	2

PNEC (Predicted No Effect Concentration) aqua (fresh water) – 1,7 mg/l

PNEC aqua (marine water) – 0,17 mg/l

PNEC aqua (intermittent releases) – 17 mg/l

PNEC soil – not determined

PNEC STP (sewage treatment plant) – 10 mg/l

PNEC oral (secondary poisoning) – not derived

DNEL (Derived No Effect Level) of the general population

Long-term exposure

oral - DNEL 2.1 mg/kg bw/day

dermal - DNEL - 10.4 mg/kg bw/day

inhalation - DNEL - 0.9 m³.

DNEL of worker

Long-term exposure - DNEL dermal - 17.4 mg/kg bw/day

Long-term exposure - DNEL inhalation - 3.1 mg/m³

8.2. Exposure controls

Exposure scenarios of identified uses form an attachment to the current Safety Data Sheet.



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8.2.1. Occupational exposure controls.
 Determination of an effectiveness of ventilation by worksites area monitoring or other measures necessary to estimate a need to use personal protection equipment.
 Exposure controls.
 Avoid high concentration of dust. Does not require specific ventilation. Well operating standard ventilation should be sufficient to remove volatiles. In case there are exposure limits considering some constituents, local fans or other facilities should be used to decrease the exposure levels below limits recommended or established by law.

8.2.2. Personal protective equipment
 A/ Protection of eyes: If there is a hazard of dust use standardized safety goggles.
 Recommended: Safety goggles with side shields.
 B/ Protection of skin
 - Protection of hands: In case there is a hazard for hands use standardized, impermeable, chemicals-resistant safety gloves. Beyond 8 hours: natural rubber (latex).
 - Others: Protective clothes. Carefully wash hands, forearms and face before eating, smoking, visiting toilet and after work. Take off dirty clothes in a proper way. Take on clean clothes only. Eye rinse facilities and shower should be installed in workplaces' area.
 C/ Protection of respiratory tract: In case there is a hazard for respiratory tract, use properly fitted protective equipment with standardized filters. The choice of the proper protective equipment should be based on known or assumed hazards of a substance and limitations of available respirators.
 Recommended: Dust mask: half-mask with dust filter P-1 or dust respirator.
 D/ Thermal hazards – none, the substance is not flammable.

8.2.3. Environmental exposure controls
 Control emission from ventilation and production facilities checking whether it fulfills environmental protection standards. In some cases there will be necessity to introduce scrubbers, filters and production line modifications to decrease pollution to proper levels.
 Air controls at worksites: according to industrial standards.

9. Physical and chemical properties

9.1. Overview of physical and chemical properties

Appearance	At 20°C and 1013 hPa single superphosphate is a grey powder with lumps.
Odour	Perceptible
Odour threshold	Not known
pH	2,8 – 3,0 – pH of water solution at concentration of 10 g/500ml of water
Melting / freezing point	The two main constituents of single superphosphate: Calcium sulfate anhydrous: melting at 1460 °C, Calcium sulfate dihydrate: decomposition at 150°C Calcium phosphate, monobasic (CAS 7758-23-8): loss of water at 100°C, decomposition at 200°C (Merck 12th)
Relative density	2.41 at 20°C
Vapour pressure	0.00000084 Pa at 20 °C
Solubility	1-100 g/l in water The two main constituents of single superphosphate: Calcium sulfate anhydrous is insoluble to slightly soluble in water (crystal structure as the mineral) or is soluble (granular or powder). Calcium sulfate dihydrate is soluble in water (2 g/l at 20°C). Calcium phosphate monobasic anhydrous is slightly soluble in water. The monohydrate is soluble in water (18 g/l according to SIDS). Superphosphate from the H ₂ SO ₄ treatment contains calcium bis(dihydrogenorthophosphate) (Merck 12th). Two minor constituents of single superphosphate: Calcium phosphate dibasic (anhydrous and dihydrate): insoluble in water (< 0.1 mg/L). Phosphate rock is not expected to dissolve in water.
Flammability	Non flammable
Decomposition temperature	See above
Explosive properties	Non explosive
Boiling point	The substance decomposes before boiling
Oxidising properties	No oxidising properties
Surface tension	No surface activity is expected.



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Flash point	Not applicable to inorganic substances.
Explosive properties	There are no chemical groups associated with explosive properties present in the molecule of the substance.
Self-ignition temperature	It does not contain groups that may react with oxygen.
Stability in organic solvents and identity of relevant degradation products	Not applicable to inorganic substances.
Viscosity	Not applicable to solids.
Granulometry	Granulated SSP 1-5 mm – min. 90 %; granulated SSP 2-5 mm – min. 90 %; dusty min.95 % < 5 mm

10. Stability and reactivity

10.1. Reactivity	The substance has no oxidizing properties, is incapable of reacting exothermically.
10.2. Chemical stability	Product is stable in normal conditions.
10.3. Hazard of danger reactions	No hazard.
10.4. Conditions to avoid	No specific conditions.
10.5. Materials to avoid	Strong oxidizers, acids, alkalis.
10.6. Hazardous decomposition products	Sulfur oxides and phosphorus oxides.

11. Toxicological information

Single superphosphate does not have to be classified according to Directive 67/548/EC and the CLP Regulation for general toxicity.

11.1. Information on toxicological effects

a/ Acute toxicity

Product/constituent	Test	Results [mg/kg bw]	Route	Species
Superphosphat	LD50	5000-6000 mg/kg female	oral	Sheep (Romney)
Calcium bis(dihydrogenorthophosphate)	LD50	> 3986 mg /kg female >5000 mg/kg male	oral	Rat (Sprague-Dawley)
	LD50	> 2000 mg / kg male/female	skin	rabbit

b/ Corrosivity/Irritation

Inhalation	Not classified. Reason for no classification: lack of data.
Ingestion (oral)	Not classified. Phosphates are absorbed from the gastrointestinal tract. Two thirds of absorbed phosphates are almost entirely excreted into the urine. Reason for no classification: conclusive but not sufficient for classification.
Skin	Not classified. Reason for no classification: conclusive but not sufficient for classification
Eyes	May cause irritation or serious damage of eyes. Hazard statement: H318: Causes serious eye damage.

c/ Skin or respiratory tract sensitization

Skin	Not classified. Reason for no classification: conclusive but not sufficient for classification
Respiratory tract	Not classified. Reason for no classification – lack of data.

d/ Repeated dose toxicity

Not classified. Reason for no classification: conclusive but not sufficient for classification

e/ Mutagenicity

Not classified. Reason for no classification: conclusive but not sufficient for classification

f/ Carcinogenicity

Not classified. Reason for no classification: conclusive but not sufficient for classification

g/ Toxicity to reproduction

Not classified. Reason for no classification – lack of data.

Effects of extreme exposure

Inhalation	Not classified. May cause mucosal membranes irritation and cough.
Ingestion	Not classified. Ingestion of larger quantities may cause nausea, vomits, thirst and a headache.
Skin	Extreme, repeated exposure may cause irritation, rash and



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	dermatitis. Precautions - P280: Wear protective gloves/protective clothing/eye protection/face protection.
Organs examined	Contains substances that may cause serious eye damage.
12. Ecological information	
12.1 Toxicity	
Simple superphosphate is not toxic. The product is not expected to harm the environment when handled and used properly.	
Aquatic compartment (including sediment)	
According to the guidance on information requirements and chemical safety assessment, Chapter R7b, biodegradability testing is not required for an inorganic substance	
Inorganic substance: no testing is required.	
Larger spills may cause eutrophication of surface waters.	
<u>Short-term toxicity to fish</u>	
<i>Oncorhynchus mykiss</i> (freshwater fish) - LC50 (96 h): > 85.9 mg/l	
<u>Short-term toxicity to aquatic invertebrates</u>	
<i>Daphnia carinata</i> (water flea) fresh water LC50 (72h): 1790 mg/l	
EC50/LC50 for freshwater aquatic invertebrates: 1790 mg/l	
<u>Long-term toxicity to aquatic invertebrates</u>	
Toxicity testing not required.	
<u>Algae and aquatic plants</u>	
EC50/LC50 freshwater algae: >87.6 mg/l	
EC10/LC10 or NOEC freshwater algae: 87.6 mg/l	
Soil compartment – No hazards.	
Atmospheric compartment – Not classified. Superphosphate is not susceptible to photodegradation.	
Indirect exposure of humans via the environment – Not applicable.	
12.2. Trwałość i zdolność do rozkładu	
Abiotic degradation	
In aqueous solution, single superphosphate is completely dissociated into the calcium ion (Ca ²⁺) and the sulphate and phosphate anion (SO ₄ ²⁻ , PO ₄ ³⁻). Hydrolysis of the substance does not occur, and it is also not susceptible to photodegradation.	
Biotic degradation	
Readily biodegradation study does not need to be conducted since the substance is inorganic (Annex VII REACH).	
Simple inorganic salts like single superphosphate, with a good aqueous solubility will exist in a dissociated form in an aqueous solution. Such a substance has a low potential for adsorption. In addition, volatilization is also unlikely due to the properties of the substance.	
12.3. Bioaccumulation.	
Simple inorganic salts which are water soluble will exist in a dissociated form in an aqueous solution. Such a substance has a low potential for bioaccumulation.	
12.4. Mobility in soil	
Phosphates soluble in water and ammonium citrate move in soil for a very short time only. They are stuck in soil and dissociate into calcium, iron and aluminum phosphates.	
12.5. PBT and vPvB assessment	
According to Annex XIII of Regulation (EC) No 1907/2006, no PBT and vPvB assessment has to be conducted since single superphosphate is inorganic.	
12.6. Other harmful effects	
None	
13. Disposal considerations	
Methods of disposal: Recycling of residues for further processing. PP or PE bags to be delivered to authorized organization for further processing or utilization. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements.	
14. Transport information	
International transport regulations	
Classification: ADR/ADNR/IMDG/IATA: Not classified	
Label: Not applicable.	
Additional information	
15. Regulatory information	
Substance is not classified under Regulation (EC) No 2037/2000 of European Parliament and of the Council of 29 June 2000 on substances that deplete the ozone layer, Regulation (EC) No 850/2004 of European Parliament and of the Council of 29 April 2004 on persistent organic pollutants and amending Directive 79/117/EEC and Regulation (EC) No 689/2008 of European Parliament and of the Council of 17 June 2008 concerning the export and import of dangerous chemicals.	
Other regulations	
UE regulations:	
- Regulation (EC) No 2003-2003 of the European Parliament and of the Council of 13 October 2003 relating to fertilizers	
- Commission Regulation (EC) No 162/2007 of 19 February 2007 amending Regulation (EC) No 2003/2003 of the European Parliament and of the Council relating to fertilizers for the purposes of adapting Annexes I and IV thereto to technical progress;	
- Regulation (EC) no 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC	
- Commission Regulation (EU) No 453/2010 of 20 May 2010 amending Regulation (EC) No 1907/2006 of the European	



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Parliament and of the Council on the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH)
- Regulation (EC) no 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labeling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006
- Commission Directive 2000/39/EC of 8 June 2000 establishing a first list of indicative occupational exposure limit values in implementation of Council Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work

National regulations:

- The Act of 10 July 2007 on fertilizers and fertilization (Journal of Laws No. 147, poz.1033), as amended;
- Ordinance of the Minister of Agriculture and Rural Development of 16 April 2008 on the detailed method of applying fertilizer and conducting training in their use (Journal of Laws No. 80, item 479);
- Ordinance of the Minister of Economy dated 08.09.2010 r. On the manner of packing mineral fertilizers, placing the fertilizer ingredient information on the packaging, the manner of testing mineral fertilizers and types of lime fertilizer (Journal of Laws No. 183/10, pos. 1229);
- Ordinance of the Minister of Agriculture and Rural Development dated 4 July 2002 on health and safety at the handling and storage of pesticides and mineral fertilizers and organic-mineral (Journal of Laws No. 99/02 pos. 897), as amended;
- The Act of 25 February 2011 on chemical substances and their mixtures (Journal of Laws No. 63/2011., Item 322) with further amendments;
- Ordinance of Minister of Health of 24 July 2012 on chemical substances and their mixtures, factors or technological processes with carcinogenic or mutagenic in the work environment (OJ 2012 pos. 890);
- Ordinance of the Minister of Labour and Social Policy of 6 June 2014. On maximum permissible concentration and intensity of harmful factors in the work environment (poz.817);
- The Environmental Protection Law of 27 April 2001., Journal of Laws 2008. No. 25, item 150 with amendments
- Waste Act of December 14, 2012 (Journal of Laws of 2013, pos. 21), as amended;
- Act on packaging and packaging waste from 13 June 2013 (Journal of Laws of 2013, item. 888.

15.2 The Manufacturer performed chemical safety assessment of the substance and has Chemical Safety Report prepared for Single Superphosphate.

16. Other information

Abbreviations:

OEL-TWA – Occupational Exposure Limits - 8-hour Time Weighted Averages - are an average value of exposure over the course of an 8 hour work shift

OEL-STEL – Occupational Exposure Limits - Short Term Exposure Limit

CAS – Chemical Abstracts Service

EC – The EC number, i.e. EINECS, ELINCS or NLP, is the official number of the substance within the European Union.

This number is indicated in the column entitled "EC No" in Attachment VI of Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labeling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006

LD50 – A calculated dose (mg/kg bw) of a chemical to which exposure for a specific length of time is expected to cause death in 50% of a defined experimental population

LC50 – A calculated concentration (mg/l) of a chemical to which exposure for a specific length of time is expected to cause death in 50% of a defined experimental population

EC50 – The molar concentration of chemical, which produces 50% of the maximum possible response (eg. growth).

PNEC – Predicted No Effect Concentration

DNEL - Derived No Effect Level

Composition of the fertilizer:

SSP dusty - 16 % P₂O₅ soluble in neutral ammonium citrate

SSP granulated – min. 16 % P₂O₅ soluble in neutral ammonium citrate

SSP granulated 19 % P₂O₅ soluble in neutral ammonium citrate

Training:

Workers should be trained in proper handling of the substance. Read Material Data Safety Sheet carefully before use.

Attachments:

ES01 Manufacturing of single superphosphate

ES02 Industrial use of SSP for formulation of preparations, intermediate use and end-use in industrial settings, including distribution and other activities related to the processes in industrial settings

ES03 Professional use of SSP in fertilizers and others

ES04 Consumer end-use of fertilizers

Sources of key data:

Chemical Safety Report prepared for SSP; Manufacturer's standards; Law regulations

Version 01.1 - change legislation - 08.04.2011

Version 01.2 - change legislation - Update - 03.24.2014

Version 02 - Updated according to Regulation CLP - 01/06/2015

Remark:

This Material Safety Data Sheet is the sole property of FOSFAN S.A. and relates only to the a.m. fertilizers

Use of this Material Safety Data Sheet with fertilizers of other manufacturers is against the law. These data are based on our



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present best knowledge. The information it contains is being given for safety guidance purposes. FOSFAN SA and/or any person representing FOSFAN SA disclaims any liability for loss or damage resulting from the use of any given data, information or recommendations in specific circumstances.

Date of issue: 01.12.2010 r.
Date of revision:

ES1
Manufacturing of single superphosphate

1. Short title of the exposure scenario – Manufacturing of the single superphosphate.

Description of activities and processes covered in the exposure scenario.

Sector of use (SU)	
SU3	Industrial uses: Uses of substances as such or in preparations at industrial sites
SU8	Manufacture of bulk, large scale chemicals (including petroleum products)

Product category (PC)	
-	Not applicable

Process category (PROC)	
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)

Environmental Release Category (ERC)	
ERC1	Manufacture of substances

Article category (AC)	
-	Not applicable

2. Conditions affecting environmental exposure (ERC1)

SSP is corrosive to eyes, the risk management measures for human health aim to avoid direct contact with the substance.

Risk management measures related to workers at industrial sites.

Information type	Data field	Explanation
Containment and local exhaust ventilation		
Containment plus good work practice required	Containment as appropriate	
Local exhaust ventilation required plus good work practise	Good standard of general ventilation	
Personal protective equipment (PPE)		
Type of PPE (gloves, respirator, face-shield etc)	Chemical goggles	To reduce exposure of the eye to a negligible level
Other risk management measures related to workers		
	Minimize number of staff exposed	



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Information type	Data field	Explanation
	Segregation of the emitting process	
	Effective contaminant extraction	
	Minimization of manual phases	
	Avoidance of contact with contaminated tools and objects	
	Regular cleaning of equipment and work area	
	Management/supervision in place to check that the RMMs in place are being used correctly and OCs followed	
	Training for staff on good practice	
	Good standard of personal hygiene	

Additional good practices (Operational Conditions and Risk Management Measures) beyond the REACH Chemical Safety Assessment established within Chemical Industry are also advised and communicated through Safety Data Sheets but are not necessarily required to control risk as laid out above.

3. Conditions affecting workers health exposure

Worst case operational conditions and risk management measures (PROC1/2/3).

Frequency and duration of use			
	Value	Unit	Remarks
Duration of worker exposure	> 4	hours/day	
Product characteristics			
Physical state of the substance/product	Solid	solid/liquid	
Volatility of the substance/product	low	hPa	volatility of the substance
Relative molecular weight of the substance	-		Needed to calculate from ppm to mg/m ³
Concentration of substance in product	-	%	Not relevant
Operational conditions not accessible for risk management			
Is the activity performed inside or outside?	Inside		
Conditions and measures at process level (source) to prevent/limit release/exposure			
Conditions and measures related to control of dispersion towards the worker			
Is local exhaust ventilation needed?	No		
Conditions and measures related to personal protective equipment and hygiene			
Is respiratory protection needed?	No		
Is skin protection needed?	No		

SSP is classified corrosive to eyes (R41 under 67/548/EEC and H318 under CLP). Exposure of the eye to dust at concentrations leading to irritation/corrosion during manufacturing of SSP can occur.



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ES02

Industrial use of SSP for formulation of preparations, intermediate use and end-use in industrial settings, including distribution and other activities related to the processes in industrial settings

4. Short title of the exposure scenario - Industrial use of SSP

Description of activities and processes covered in the exposure scenario

Sector of use (SU)	
SU3	Industrial uses: Uses of substances as such or in preparations at industrial sites
SU10	Formulation [mixing] of preparations and/or re-packaging (excluding alloys)

Product category (PC)	
PC12	Fertilizers
PC19	Intermediates
PC20	Products such as ph-regulators, flocculants, precipitants, neutralization agents

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

Environmental Release Category (ERC)	
ERC2	Formulation of preparations
ERC6a	Industrial use resulting in manufacture of another substance (use of intermediates)

Article category (AC)	
-	Not applicable

5. Risk management measures related to workers at industrial sites (ERC2/6a)

Risk management measures related to workers at industrial sites

Information type	Data field	Explanation
Containment and local exhaust ventilation		
Containment plus good work practice required	Containment as appropriate	
Local exhaust ventilation required plus good work practice	Good standard of general ventilation	
Personal protective equipment (PPE)		
Type of PPE (gloves, respirator, face-shield etc)	Chemical goggles	To reduce exposure of the eye to a negligible level



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Information type	Data field	Explanation
Other risk management measures related to workers		
	Minimize number of staff exposed	
	Segregation of the emitting process	
	Effective contaminant extraction	
	Minimization of manual phases	
	Avoidance of contact with contaminated tools and objects	
	Regular cleaning of equipment and work area	
	Management/supervision in place to check that the RMMs in place are being used correctly and OCs followed	
	Training for staff on good practice	
	Good standard of personal hygiene	

Additional good practices (Operational Conditions and Risk Management Measures) beyond the REACH Chemical Safety Assessment established within Chemical Industry are also advised and communicated through Safety Data Sheets but are not necessarily required to control risk as laid out above.

6. Controls of workers exposure (PROC1/2/3/5/8a/8b/9)

Worst case operational conditions and risk management measures.

Frequency and duration of use			
	Value	Unit	Remarks
Duration of worker exposure	> 4	hours/day	
Product characteristics			
Physical state of the substance/product	Solid/liquid	solid/liquid	
Volatility of the substance/product	low	hPa	volatility of the substance
Relative molecular weight of the substance	-		Needed to calculate from ppm to mg/m ³
Concentration of substance in product	-	%	Substance as such
Operational conditions not accessible for risk management			
Is the activity performed inside or outside?	Inside		
Conditions and measures at process level (source) to prevent/limit release/exposure			
Conditions and measures related to control of dispersion towards the worker			
Is local exhaust ventilation needed?	No		
Conditions and measures related to personal protective equipment and hygiene			
Is respiratory protection needed?	No		
Is skin protection needed?	No		

SSP is classified corrosive to eyes (R41 under 67/548/EEC and H318 under CLP). Exposure of the eye to dust/splashes at concentrations leading to irritation/corrosion during industrial use of SSP can



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occur.

ES 03
Professional use of SSP in fertilizers and others

7. Short title of the exposure scenario - Professional use of SSP in fertilizers and others

Description of activities and processes covered in the exposure scenario

Sector of use (SU)	
SU22	Professional uses: Public domain (administration, education, entertainment, services, craftsmen)

Product category (PC)	
PC12	Fertilizers
PC20	Products such as ph-regulators, flocculants, precipitants, neutralization agents

Process category (PROC)	
PROC2	Use in closed, continuous process with occasional controlled exposure
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)
PROC13	Treatment of articles by dipping and pouring
PROC19	Hand-mixing with intimate contact and only PPE available

Environmental Release Category (ERC)	
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

Article category (AC)	
-	Not applicable

8. Conditions affecting environmental exposure (Environmental Release Category – ERC8b/8d/8e)

Because SSP is irritating/corrosive to eyes, the risk management measures for human health should focus on the prevention of direct contact with the substance. Product related design measures preventing direct eye contact with SSP and preventing formation of dust and splashes are more important in addition to the personal protective equipment measures.

Product related operational measures are required. These include specific dispensers and pumps etc specifically designed to prevent splashes/spills/exposure to occur.

Following table gives an overview of the personal protective equipment recommendations. The degree of restriction depends on the concentration of SSP in the preparation.

Risk management measures related to workers at industrial sites

Information type	Data field	Explanation
Containment and local exhaust ventilation		



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Information type	Data field	Explanation
Containment plus good work practice required	Containment as appropriate	
Local exhaust ventilation required plus good work practice	Good standard of general ventilation	
Personal protective equipment (PPE)		
Type of PPE (gloves, respirator, face-shield etc)	Chemical goggles	To reduce exposure of the eye to a negligible level
Other risk management measures related to workers		
	Minimize number of staff exposed	
	Segregation of the emitting process	
	Effective contaminant extraction	
	Minimization of manual phases	
	Avoidance of contact with contaminated tools and objects	
	Regular cleaning of equipment and work area	
	Management/supervision in place to check that the RMMs in place are being used correctly and OCs followed	
	Training for staff on good practice	
	Good standard of personal hygiene	

Additional good practices (Operational Conditions and Risk Management Measures) beyond the REACH Chemical Safety Assessment established within Chemical Industry are also advised and communicated through Safety Data Sheets but are not necessarily required to control risk as laid out above.

9. Conditions affecting workers health exposure (PROC2/8a/8b/9/13/19)

Worst case operational conditions and risk management measures

Frequency and duration of use			
	Value	Unit	Remarks
Duration of worker exposure	> 4	hours/day	
Product characteristics			
Physical state of the substance/product	Solid/liquid	solid/liquid	
Volatility of the substance/product	low	hPa	volatility of the substance
Relative molecular weight of the substance	-		Needed to calculate from ppm to mg/m ³
Concentration of substance in product	>25	%	SSP can occur in different concentrations in the endproducts
Operational conditions not accessible for risk management			
Is the activity performed inside or	Inside/outside		



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outside?	de		
Conditions and measures at process level (source) to prevent/limit release/exposure			
Conditions and measures related to control of dispersion towards the worker			
Is local exhaust ventilation needed?	No		
Conditions and measures related to personal protective equipment and hygiene			
Is respiratory protection needed?	No		
Is skin protection needed?	No		

SSP is classified corrosive to eyes (R41 under 67/548/EEC and H318 under CLP). Exposure of the eye to dust/splashes at concentrations leading to irritation/corrosion during professional use of SSP can occur. However, it has to be noted that the endproducts are further diluted which can lead to levels at which no eye irritation/corrosion will occur.

ES4
Consumer end-use of fertilizers

10. Short title of the exposure scenario – Consumer end-use of fertilizers

Description of activities and processes covered in the exposure scenario

Sector of use (SU)	
SU21	Consumer uses: Private households (= general public = consumers)
Product category (PC)	
PC12	Fertilizers
Process category (PROC)	
-	Not applicable
Environmental Release Category (ERC)	
ERC8b	Wide dispersive indoor use of reactive substances in open systems
ERC8e	Wide dispersive outdoor use of reactive substances in open systems
Article category (AC)	
-	Not applicable

11. Control of consumers exposure

Risk management measures related to consumers' use

Information type	Data field	Explanation
Personal protective equipment (PPE) required under regular conditions of consumer use		
Type of PPE (gloves, etc)	goggles	To reduce exposure of the eye to a negligible level
Instructions addressed to consumers		
	Product labeling	

SSP is classified corrosive to eyes (R41 under 67/548/EEC and H318 under CLP). Exposure of the eye to dust/splashes at concentrations leading to irritation/corrosion during consumer use of SSP can occur. However, it has to be noted that the endproducts are further diluted which can lead to levels at which no eye irritation will occur.

Exposure to eye irritating dilutions of SSP can occur during consumer use of fertilizers. It is assumed that during normal use exposure will only occur incidentally. Furthermore, it is assumed that existing



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controls (i.e. personal protective equipment based on classification and labeling with R41/H318) are applied for these exposure situations.