



LUVENA

SAFETY DATA SHEET SUPERPHOSPHATE

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

1.1. Product identifier

Trade name: Powdery Superphosphate; Granulated Superphosphate
 Name: Superphosphate
 Type of substance: multi constituent substance
 CAS No.: 8011-76-5
 EC No.: 232-379-5
 IUPAC name: Superphosphate
 Registration No.: 01-2119488967-11-xxxx

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

Identified uses

Short description of identified uses	Sector of use	Process category	Product category	Final use	Exposure scenario
Production of the substance Application in closed processes	SU8	PROC1 PROC2 PROC3	-	production	ES1- Appendix 1
Sampling, loading, filling, transfer, transfer from/to small containers, storage, packing at places intended and not intended for this purpose. Industrial use	SU3	PROC 8a PROC 8b PROC 9	PC12, PC20	formulation, industrial	ES2- Appendix 2
Application as an intermediate in synthesis of other substances	SU3	PROC1 PROC2 PROC3	PC19	industrial	ES2- Appendix 2
Preparation of mixtures	SU3	PROC2 PROC3 PROC5	PC12	formulation	ES2- Appendix 2
Sampling, loading, filling, transfer, transfer from/to small containers, storage, packing at places intended and not intended for this purpose. Professional use	SU22	PROC 8a PROC 8b PROC 9	PC12	professional	ES3-Encl.3
Professional use of fertilizers containing superphosphate - sowing in field and agricultural cultivation, foliar feeding on fields, fertigation.	SU22	PROC 8a PROC 8b PROC 2	PC12	professional	ES3-Encl.3
Use by consumers of fertilizers containing superphosphate - sowing in house gardens (solid and liquid fertilizers) and outdoor use	SU21	-	PC12	consumer	ES4-Encl.4

Use advised against: None

1.3. Details of the supplier of the safety data sheet

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 ul. Romana Maya 1
 62-030 Lubon
 tel. (061) 8900100
 fax. (061) 8900400
 e-mail of the person responsible for preparation of this safety sheet danuta.rybarczyk@luvena.pl

1.4. Emergency telephone number

MSDS is consistent with Appendix II to REACH as amended

61 8900 391, 61 8900 100 7⁰⁰-15⁰⁰ hours

Toxicological Centres:

Gdansk 058 3492831
Cracow 012 6471105; 012 6831134; 012 6831300
Lublin 081 7408983
Lodz 042 6314767
Poznan 061 8476946; 061 8481011 ext. 265
Rzeszow 017 866 4406
Sosnowiec 032 2661145; 032 2660885 ext.130
Tarnow 014 6299588
Warsaw 022 6190897; 022 6196654
Wroclaw 071 3433008; 071 3427021; 071 7890214

SECTION 2: Hazards identification**2.1. Classification of the substance or mixture**

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

*Eye Dam. 1 Serious damage to eyes, cat. 1**H318 Causes serious eye damage***2.2. Label elements****Pictogram:****Warning:** DANGER**Identification:** CAS 8011-76-5 Superphosphate**Phrases describing the type of risk:**

H318 Causes serious eye damage

Phrases indicating precautionary measures:

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.

P 310 Immediately call a POISON CENTER or doctor/a physician.

2.3. Other hazards

Pursuant to appendix XII to the Regulation of the European Parliament and Council (EC) No. 1907/2006, this substance is not evaluated as PBT and vPvB due to the fact that superphosphate is an inorganic substance

SECTION 3: Composition / information on ingredients**3.1. Substances****Superphosphate**

Concentration: 80-100 %

Type of substance: multi constituent substance

Identification numbers:

CAS No	EC No.	Index No.
8011-76-5	232-979-5	-

IUPAC name: Superphosphate

Chemical formula: not determined

Components:**Calcium sulphate**

Concentration: 31-65 %

Identification numbers:

CAS No	EC No.	Index No.
7778-18-9	231-900-3	-

MSDS is consistent with Appendix II to REACH as amended

IUPAC name: calcium sulphate

Chemical formula: CaSO₄**Calcium dihydrogen phosphate**

Concentration: 23-45 %

Identification numbers:

CAS No	EC No.	Index No.
7758-23-8	231-837-1	-

IUPAC name: Calcium dihydrogenphosphate

Chemical formula: Ca(H₂PO₄)₂**Impurities****Fluorapatite**

Concentration: 0.1-15 %

Identification numbers:

CAS No	EC No.	Index No.
1306-05-4	215-144-1	-

IUPAC name: Fluorapatite

Chemical formula: Ca₅F(PO₄)₃**Dicalcium phosphate**

Concentration: 0.1-15 %

Identification numbers:

CAS No	EC No.	Index No.
7757-93-9	231-826-1	-

IUPAC name: calcium hydrogen phosphate dihydrate

Chemical formula: CaHPO₄**Phosphoric Acid**

Concentration: 0.1-5 %

Identification numbers:

CAS No	EC No.	Index No.
7664-38-2	231-633-2	015-011-00-6

IUPAC name: phosphoric acid

Chemical formula: H₃PO₄**Naturally occurring substance**

Concentration: 0.1-10 %

Identification numbers:

CAS No	EC No.	Index No.
-	310-127-6	-

IUPAC name: -

Chemical formula: not determined

3.2. Mixtures

Not applicable - material safety data sheet

SECTION 4: First aid measures**4.1. Description of first aid measures****4.1.1. Inhalation.**

If undesirable symptoms occur (e.g. dizziness, sleepiness and irritation of respiratory system) take the injured

MSDS is consistent with Appendix II to REACH as amended

person out of the contaminated environment to fresh air. In case of breathing problems, apply oxygen. If the person is not breathing start resuscitation. Consult a physician.

4.1.2. Skin contact Wash the contaminated skin with copious amount of water with soap for at least 15 minutes, removing thoroughly the contaminated clothes and shoes. Consult a physician in case the irritation lasts.

4.1.3. Eyes contact

Immediately rinse eyes with copious amount of running water for at least 15 minutes, lifting the upper and lower eyelid from time to time. Remove contact lenses, if any, and are easy to remove. Continue rinsing. Immediately consult POISONING TREATMENT CENTER or a physician

4.1.4 Digestion

If the injured person feels unwell, consult a physician. Wash the mouth out with copious amount of water and give plenty of water to drink. Do not induce vomiting. Do not administer anything orally, if the injured person is unconscious. If the symptoms do not abate, provide medical assistance.

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

Severe effect: irritant to eyes

Long-term effect: not known

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

Inhalation of gases produced during fire and thermal decomposition, containing phosphorus and sulphur oxides, may have irritating and caustic effect on respiratory system. Effect on lungs may be delayed.

SECTION 5: Fire-fighting measures

5.1. Extinguishing measures

Fire in the environment should be extinguished with the use of extinguishing measures as appropriate for the burning materials.

5.2. Special hazards arising from the substance or mixtures

During fire there may be produced hazardous gases or vapours: phosphorus and sulphur oxides

5.3. Advice for firefighters

No special measures necessary. In case of fire wear personal breathing apparatus and protective clothing. Avoid inhalation of vapours, stand on the leeward side. Ensure maximum ventilation - open windows and doors.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Avoid creation of dusts and prevent spreading by the wind. Provide adequate ventilation. Avoid contact with eyes, skin and clothes. Use appropriate protective equipment: protective clothing, dust masks, protective gloves and glasses

6.2. Environmental precautions

Avoid contamination of water, water intakes or sewers. In case of accidental pollution, notify appropriate authorities.

6.3. Methods and materials for containment and cleaning up

Collect the spilled material and place it with appropriate containers marked with the labels: for recycling or neutralisation. Wash off with copious amounts of water. Avoid dust clouds and spreading by the wind.

6.4. Reference to other sections

Personal protective measures - see section 8

Handling of waste - see section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Avoid contact with eyes, skin and clothes. Avoid excessive dust formation. Protect from moisture.

Avoid contamination with flammable materials (e.g. diesel fuel, grease, etc.) and/or other incompatible materials - see 10.5. Thoroughly clean all equipment prior to maintenance and repairs.

Do not eat, drink or smoke during handling the substance. Wash yourself thoroughly after work.

7.2. Conditions for safe storage, including any incompatibilities

MSDS is consistent with Appendix II to REACH as amended

This fertilizer should be stored in unit packages or in bulk, provided it is secured against direct exposure to atmospheric conditions.

Fertilizer in bulk may be stored in heaps formed on hardened, impermeable ground, after prior covering with water tight material or in roofed, permeable to air facilities.

Store the product away from alkalies, urea, ammonium nitrate.

7.3. Special end use(s)

At present there are no recommended rules of behaviour resulting from special final uses of the product

SECTION 8: Exposure control / personal protection

8.1. Control parameters

Total dust TLV 10 mg/m³

Methods of exposure assessment:

PN-Z-04008-7:2002 PN-Z-04008-7:2002/AZ1:2004 Sampling: dust and chemical air pollution. Dosimetric and stationary method

PN-91/Z-04030.05 Concentration of total dust Range: (0.15 - 25.0) mg/m³ Filtration and weighing method

PN-91/Z-04030.06 Concentration of respirable dust Range: (0.15 - 16.6) mg/m³ Filtration and weighing method

Acceptable exposure limits:

Ways of exposure	Highest acceptable level of human exposure DNEL	
	Worker	Society in general
Oral ⁽¹⁾	Not applicable	2.1 mg/kg of body mass/day
Skin ⁽¹⁾	17.4 mg/kg of body mass/day	10.4 mg/kg of body mass/day
Inhalation ⁽¹⁾	3.1 mg/m ³	0.9 mg/m ³

⁽¹⁾ As severe toxic hazard leading to classification and labelling of the substance has not been established, during long-time exposure DNEL is sufficient to ensure that the effects of severe exposure to the substance do not exist.

8.2. Exposure controls

8.2.1 Exposure control technical measures

Pursuant to the exposure scenarios attached:

Exposure scenario	Use	Reference
ES1	Production of the substance	see appendix No. 1 to this sheet
ES2	Industrial application for preparation of mixtures, semi-finished products and target industrial applications	see appendix No. 2 to this sheet
ES3	Professional application for preparation of mixtures and final use	see appendix No. 3 to this sheet
ES4	Final use by the consumer as fertilizers and other products	see appendix No. 4 to this sheet

Avoid high dustiness. Provide adequate ventilation as required. Moreover, following the good industrial practice during storage and handling of the substance one may use the equipment for eyes rinsing and safety shower.

8.2.2 Personal protective measures

In case of insufficient ventilation and excessive dustiness use respiratory system protection (dust mask or respirator with appropriate filters, e.g. EN 143, 149, Filter P2, P3).

Use protective gloves (e.g. plastic, rubber, leather) or other personal protection measures in case of long-lasting contact with the product. Use protective clothing.

In case of excessive dustiness and exposure above the allowed limit, it is necessary to use protective glasses or face shield. In other cases the use of protective glasses is recommended.

It is recommended to apply basic hygiene principles when handling chemicals, i.e.: wash your hands, forearms and face thoroughly after completed work and before eating, smoking and using WC. Use appropriate techniques to dispose of potentially contaminated clothes.

8.2.3 Environmental precautions

Dispose the water used for rinsing according to the local and national regulations.

MSDS is consistent with Appendix II to REACH as amended

SECTION 9 : Physical and chemical proprieties**9.1. Information on basic physical and chemical proprieties**

Appearance	Grey solid body in the form of powder and pellets
Odour	No odour
Odour threshold	No data
pH	3,0 aqueous solution 1%
Melting / freezing point	Does not reach melting point, decomposition >100°C (on the basis of the main components)
Initial boiling point and boiling range	Does not reach boiling point, decomposition
Flash point	Not relevant, non-combustible inorganic substance
Evaporation rate	No data
Flammability (of the solid body, gas)	Non-combustible substance (on the basis of the composition)
Upper/lower flammability or explosive limits	Not applicable
Vapour pressure	8.4×10^{-7} Pa t=20°C (OECD 104, EC A.4)
Vapour density	No data
Relative density [0°C]	2.41 g/cm ³ (OECD 109, EC A.3)
Solubility	1-100 g/l t=20°C (on the basis of the main components)
N-octanol / water partition coefficient:	Not applicable - inorganic substance
Autoignition point	None
Decomposition temperature	No data
Viscosity	Not applicable - solid substance.
Explosive properties	No properties (on the basis of the composition)
Oxidizing properties	No properties (on the basis of the composition and experience in use)

9.2. Other information

None

SECTION 10: Stability and reactivity**10.1. Reactivity**

Product stable under recommended storage and handling conditions (see Section 7).

10.2. Chemical stability

Product stable under recommended storage and handling conditions (see Section 7).

10.3. Possibility hazardous reactions

Dangerous reactions may occur during heating - decomposition products

10.4. Conditions to avoid

Heating, contact with alkalies

10.5. Incompatible materials

Alkalies, urea, ammonium nitrate

10.6. Hazardous decomposition productsUnder recommended storage and handling conditions no hazardous decomposition products should be produced. Production of poisonous gasses is possible during heating or in case of fire: e.g. phosphorous oxides (e.g. P₂O₅), sulphur oxides (SO_x) and toxic fluorides**SECTION 11: Toxicological information****11.1. Information on toxicological effects**

Health results, short-term exposure:

Acute toxicity:

LD ₅₀ (orally)	> 2000 mg/kg (OECD 425 test material: diammonium phosphate)
LD ₅₀ (skin)	> 5000 mg/kg (OECD 402 test material : diammonium phosphate)
LC ₅₀ (inhalation)	> 5 mg/l (OECD 403 test material: diammonium phosphate)

MSDS is consistent with Appendix II to REACH as amended

Effect:	
Skin irritation:	does not irritate (OECD 404 test material: diammonium phosphate)
Eye irritation:	caustic effect (OECD 405, EC B.5)
Skin sensitization:	does not sensitize (OECD 429, EC.42 test material: diammonium phosphate)
Other effects:	
<u>Health results, long-term exposure:</u>	
NOAEL orally 28 days:	250 mg/kg of body mass/day (OECD 422 test material: concentrated superphosphate TSP)
Mutagenicity:	negative (OECD 471 test material: concentrated superphosphate TSP) negative (OECD 473) negative (OECD 476 test material: diammonium phosphate)
Effect on reproductiveness:	orally NOAEL 750 mg/kg of body mass/day (OECD 422 test material: concentrated superphosphate TSP)
Carcinogenicity:	no data
STOT one-time exposure:	not applicable
STOT multi-time exposure:	not applicable
Exposure by aspiration:	no data

SECTION 12: Ecological information

12.1. Toxicity

Acute toxicity indicator

LC ₅₀ (fish, 96 h)	>85.9 mg/l (OECD 203, test material: diammonium phosphate)
EC ₅₀ (daphnia, 72 h)	1790 mg/l
EC ₅₀ (algae, 72 h)	> 87.6 mg/l (OECD 201, test material: concentrated superphosphate TSP)
EC ₅₀ (active deposit, 3 h)	>100 mg/l, NOEC: 100 mg/l (OECD 209, EC C.11)

12.2. Persistence and degradability

Standard tests were not performed due to the fact that SSP is an inorganic substance. Degradation in the process of dissociation to simple phosphates/sulphates and cation (Ca²⁺).

Product should not be released to sewage in large quantities, as it may cause eutrophication of closed water regions.

12.3. Bioaccumulative potential

Due to the properties of the substance - the potential is low

12.4. Mobility in soil

Good solubility in water. Due to the properties of the substance - the potential absorption is low

12.5. Results of PBT and vPvB assessment

Pursuant to Appendix XII to the Regulation of the European Parliament and of the Council (EC) No. 1907/2006, the substance is not evaluated as PBT and VPPvB due to the fact that superphosphate is an inorganic substance

12.6. Other adverse effects

none

SECTION 13: Disposal considerations

13.1. Waste treatment methods

According to local and national regulations the waste is disposed by deposition or combustion. Prevent the substances from penetration to watercourses. Biodegradation control is possible under the process of waste water treatment.

Wastes and used packagings should be delivered to a company dealing with waste management.

Waste code number: 16 03 03 Inorganic wastes containing hazardous substances

Package waste code: 15 01 02 Plastic packages.

SECTION 14: Transport information

May be transported with the use of any means of transportation provided that the product is protected against weather conditions and goods displacement.

14.1. UN number

MSDS is consistent with Appendix II to REACH as amended

It is not classified as hazardous product according to ADR/RID regulations

14.2. UN proper shipping name

It is not classified as hazardous product according to ADR/RID regulations

14.3. Transport hazard class(es)

It is not classified as hazardous product according to ADR/RID regulations

14.4. Packaging group

It is not classified as hazardous product according to ADR/RID regulations

14.5. Environmental hazards

Not labelled as dangerous for the environment

14.6. Special precautions for user

None

14.7. Transport in bulk according Annex II of MARPOL to the IBC code

Not applicable

SECTION 15: Regulatory information

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

Acts

Journal of Laws 2011 No. 63, item 322 as amended Act of 25 February 2011 on chemical substances and their mixtures

Journal of Laws 2013 item 21 Act of 14 December 2012 on wastes

Journal of Laws of 2013, item 888 Act of 13 June 2013 on packaging and packaging wastes handling

Regulations - Classification

Journal of Laws 2012 item 1018 as amended Regulation of the Minister of Health of 10 August 2012 on the criteria and method of classification of chemical substances and their mixtures

Regulations - Labelling

Journal of Laws 2012 item 445 as amended Regulation of the Minister of Health of 20 April 2012 on labelling of packages of hazardous substances and hazardous mixtures and some chemical mixtures

Journal of Laws 2010 No. 83 item 544 as amended Regulation of the Minister of Health of 29 April 2010 on the types of hazardous substances and hazardous preparations whose packages are fitted with child-resistant fastenings and carry a tactile warning of danger.

Regulations - Packing

Journal of Laws 2012 item 688 as amended Regulation of the Minister of Health of 11 June 2012 on the categories of hazardous substances and hazardous substances whose packages are fitted with child-resistant fastenings and carry a tactile warning of danger (Journal of Laws of 20 June 2012)

Regulations - Occupational Health and Safety

Journal of Laws 2012 No. 890 Regulation of the Minister of Health of 22 July 2012 on chemical substances, their mixtures, agents or manufacturing process having cancerous or mutagenic effect in labour environment.

Journal of Laws 2005 No. 11, item 86 as amended Regulation of the Minister of Health of 30 December 2004 on occupational health and safety of works associated with the occurrence of chemical factors at the place of work

Journal of Laws 2014 item 817 Regulation of the Minister of Labour and Social Policy of 6 June 2014 on the maximum acceptable concentration and intensity of agents hazardous to health in the work environment

Regulations - Environmental protection

Journal of Laws 2014, No. 1923 Regulation of the Ministry of the Environment of 9 December 2014 on waste catalogues

Regulations - Limitations and bans

Journal of Laws 2013, item 180 as amended Regulation of the Minister of Economy of 29 January 2013 on limitations of production, turnover or use of hazardous substances and mixtures or posing a threat and introducing for turnover and application of products containing the same substances and mixtures.

Journal of Laws 2013, item 1314 Regulation of the Minister of Economy of 10 October 2013 on applying the restrictions specified in Appendix XVII to the Regulation No. 1907/2006.

EC REACH Regulations

Official Journal of the EU 2007 L 136, corrigendum to Official Journal of the EU 2006 L 396 + Corrigendum to the Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), 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

MSDS is consistent with Appendix II to REACH as amended

corrigenda (Official Journal of the EU L 36 of 5.2.2009)+ Official Journal of the European Union L 118 of 12.5.2010 as amended EC Regulations - CLP Official Journal UE 2008 L 354 Official Journal of the European Union 2008 L 353 as amended EC Regulations Export import Official Journal of the EU 2012 L 201 Other Journal of Laws No. 164, item 1115	Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC Regulation (EC) No 1336/2008 of the European Parliament and of the Council of 16 December 2008 amending Regulation (EC) No 648/2004 in order to adapt it to Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006 Regulation (EC) No 649/2012 of the European Parliament and of the Council of 4 July 2012 concerning the export and import of dangerous chemicals Classification of dangerous goods according to ADR Agreement and RID Regulations Regulation of the Minister of Health of 1 September 2010 on withdrawal of a chemical substance, chemical preparation or product and the method of its storage
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15.2. Chemical Safety Assessment

According to Article 14 of REACH there have been conducted Chemical Safety Assessment for this substance.

SECTION 16: Other information

Training: Employees should be instructed within the scope of proper handling of the preparation. One should read the safety data sheet before use of the preparation.

Limitations of use: none.

Data sources: Legal regulations listed under item 15.1, Chemical Safety Report, eSDS prepared by FARM consortium

Introduced amendments (marked in red):

Section 1.1 and section 16 - change of trade names

Section 1.4 - addition of emergency number

Section 2.1- addition of the name of threat, deletion of classification according to Directive 67/548/EEC

Section 3.1- change of erroneous identification numbers for calcium sulphate

Section 15 . update of legal regulations

Technical parameters of the products

Nutrients, forms, solubility	Content %, m/m	
	SUPERPHOSPHATE POWDERY	SUPERPHOSPHATE GRANULATED
phosphorous soluble in neutral solution of ammonium citrate expressed as P ₂ O ₅ , % (m/m)	17.0	19.0
- including phosphorus water-soluble expressed as P ₂ O ₅ , at least % (m/m)	93	93
calcium water-soluble expressed as CaO	24.0	25.0
total sulphur expressed as SO ₃	30,0	32,5
Fertilizer type	EC FERTILIZER Simple superphosphate A2.2a)	EC FERTILIZER Simple superphosphate A2.2a)

Declared contents tolerance according to EC Regulation No. 2003/2003 on fertilizers

All data contained herein are consistent with the present knowledge and our experience. Safety data sheet is a description of products as regards safety requirements. It is not the intention of our data to ensure product's properties.



EXPOSURE SCENARIO SUPERPHOSPHATE ES1

1. Name of the scenario: ES1 Manufacturing of the substance	
Sector of use: SU 3 Industrial production: final use of chemical substances as such or their preparations in industrial facilities SU 8 Production of multi-tonnage bulk chemicals (including petroleum-derived products)	
Process category PROC 1 Use in a closed process, no possible leak or exposure PROC 2 Use in a closed, continuous process with possible sporadic, controlled exposure (e.g. sampling). PROC 3 Use in a closed, repeatable production process (synthesis or mixing)	
Environmental Release Category ERC1 Production of the substance	
2 Operating conditions and risk management means	
2.1 Environmental exposure control	
Environmental release during production ERC1 Production of the substance The effect of the released substance on the environment has not been assessed because the substance does not meet the criteria of a substance hazardous to the environment	
2.2 Control of workers exposure during production of the substance	
All process categories are covered by this scenario because operating conditions (OC) and risk management measures (RMM) for PROC 1/2/3 are identical.	
Product characteristics	
<i>Conditions concerning the product, e.g. substance concentration in the preparation, physical state of that preparation (solid, liquid; if solid: dusting level), package construction influencing the exposure</i>	Solid with low dusting level
Used quantities	
<i>Quantities used at the work place; Note: this information is often not useful for the assessment of worker's exposure</i>	Not applicable
Frequency and use/exposure duration	
<i>Exposure duration (e.g. number of hours per shift) and frequency (e.g. single or repeated cases)</i>	Over 4 h / day
Human factors which are not affected by risk management	
<i>Special use conditions, e.g. potentially endangered bodily parts, increased breath volume under specified working conditions</i>	Not applicable
Other operating conditions having effect on workers exposure	
<i>Other operating conditions, e.g. facility cubic capacity, the work is performed outdoors/ indoors, process conditions related to temperature and pressure</i>	Work indoors
Technical conditions and measures implemented at the process stage (source) to prevent release	
<i>The method of conducting the process to prevent release and workers' exposure; also covers conditions ensuring strict air-tight sealing;</i>	Not applicable

<i>specification of air-tight sealing effectiveness (e.g. loss or exposure)</i>	
Technical conditions and dispersion control measures from source towards workers	
<i>Technical controls, ventilation type: general, uptake; specification of measure effectiveness</i>	Proper limitation General ventilation
Organization measures implemented to prevent/limit release, dispersion and exposure	
<i>Specified organisation measures or measures useful in functioning of specific technical means. These means should be specified in order to indicate strictly controlled conditions</i>	Not applicable
Conditions and measured related to personal precautions, hygiene and health assessment	
<i>Personal precautions, e.g. wearing gloves, skin protection of the entire body, goggles, breathing mask; specify effectiveness of a given measure</i>	Protective glasses in order to limit the exposure to the slight level

3 Assessment of exposure and reference to its source

Environmental exposure

The effect of the released substance on the environment has not been assessed because the substance does not meet the criteria of a substance hazardous to the environment

Worker exposure

Qualitative approach was the grounds for specification of safe use of the substance by the users. Main toxicological effect . eyes irritation, for which DNEL value cannot be determined because no dose-answer information is available. Minimal effects of chronic exposure were recorded only with very high concentration levels of the substance, so under normal conditions of use of the substance humans are not exposed, so the quantitative assessment is not required.

4 Guidelines for Further User to assess whether the work is performed according to conditions specified in the Exposure Scenario

No additional risk management measures are available beside the ones specified above. See chemical googles above

5 Additional good practice hint beside Chemical Safety Assessment REACH

Note: The measures specified in this chapter have not been taken into account while estimating exposure referring to the above exposure scenario. These are not subject to the obligations specified in article 37 (4) of REACH regulation.

Additional good practice recommendations (operating conditions and risk management measures) provided in the safety data sheets, such as:

- limitation, as applicable;
- limitation to minimum the number of exposed workers;
- segregation of issue;
- effective exhaust
- general ventilation;
- minimum servicing staff;
- avoiding contact with contaminated tools and objects;
- regular cleaning of equipment and place of work;
- management / supervision
- staff training;
- personal hygiene;



EXPOSURE SCENARIO SUPERPHOSPHATE ES2

1. Scenario name: ES2 Industrial application for preparation of mixtures, semi-finished products and final industrial applications

Application sector:

SU 3 Industrial production: final use of chemical substances as such or their preparations in industrial facilities
 SU 10 Production Preparation [mixture] of preparations and/or re-packing

Product category

PC 12 Fertilizers
 PC 19 Semi-finished products
 PC 20 Products such as pH regulators, flocculating agents, neutralizing agents, other not specified uses

Process category

PROC 1 Use in a closed process, no possible leak or exposure
 PROC 2 Use in a closed, continuous process with possible sporadic, controlled exposure (e.g. sampling).
 PROC 3 Use in a closed, repeated production process (synthesis or mixing)
 PROC 5 Mixing or bonding in production processes of preparations or products (multistage and/or significant contact).
 PROC 8a Transfer of substances or preparations (loading/unloading) from/to tanks/ large containers at places not intended for this purpose.
 PROC 8b Transfer of substances or preparations (loading/unloading) from/to tanks/ large containers at places intended for this purpose.
 PROC 9 Transfer of substances or preparations to small containers (dedicated filling line, including weighing).

Environmental release category

ERC2 Composure of substances in chemical preparations (mixtures).
 ERC 6a Industrial use for production of another substance (use of semi-finished products).

2 Operating conditions and risk management means

2.1 Environmental exposure control

Environmental release during production
 ERC 2 Composure of substances in chemical preparations (mixtures).
 ERC 6a Industrial use for production of another substance (use of semi-finished products).
 The effect of the released substance on the environment has not been assessed because the substance does not meet the criteria of a substance hazardous to the environment

2.2 Workers exposure control during industrial preparation of mixtures, semi-finished products and end industrial use

All process categories are covered by this scenario because operating conditions (OC) and risk management measures (RMM) for PROC1/2/3/5/8a/8b/9 are identical.

Product characteristics

<i>Conditions concerning the product, e.g. substance concentration in the preparation, physical state of that preparation (solid, liquid; if solid: dusting level), package construction influencing the exposure</i>	Solid with low dusting level Liquid
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Used quantities

<i>Quantities used at the work place; Note: this information is often not useful for the assessment of worker's exposure</i>	Not applicable
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Frequency and use/exposure duration

<i>Exposure duration (e.g. number of hours per shift) and frequency (e.g. single or repeated cases)</i>	Over 4 h / day
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Human factors which are not affected by risk management	
<i>Special use conditions, e.g. potentially endangered bodily parts, increased breath volume under specified working conditions</i>	Not applicable
Other operating conditions having effect on workers exposure	
<i>Other operating conditions, e.g. facility cubic capacity, the work is performed outdoors/ indoors, process conditions related to temperature and pressure</i>	Work indoors
Technical conditions and measures implemented at the process stage (source) to prevent release	
<i>The method of conducting the process to prevent release and workers exposure; also covers conditions ensuring strict air-tight sealing; specification of air-tight sealing effectiveness (e.g. loss or exposure)</i>	Not applicable
Technical conditions and dispersion control measures from source towards workers	
<i>Technical controls, ventilation type: general, uptake; specification of measure effectiveness</i>	Proper limitation General ventilation
Organization measures implemented to prevent/limit release, dispersion and exposure	
<i>Specified organisation measures or measures useful in functioning of specific technical means. These means should be specified in order to indicate strictly controlled conditions</i>	Not applicable
Conditions and measured related to personal precautions, hygiene and health assessment	
<i>Personal precautions, e.g. wearing gloves, skin protection of the entire body, goggles, breathing mask; specify effectiveness of a given measure</i>	Protective glasses in order to limit the exposure to the slight level

3 Assessment of exposure and reference to its source

Environmental exposure

The effect of the released substance on the environment has not been assessed because the substance does not meet the criteria of a substance hazardous to the environment

Worker exposure

Qualitative approach was the grounds for specification of safe use of the substance by the users. Main toxicological effect . eyes irritation, for which DNEL value cannot be determined because no dose-answer information is available. Minimal effects of chronic exposure were recorded only with very high concentration levels of the substance, so under normal conditions of use of the substance humans are not exposed, so the quantitative assessment is not required.

4 Guidelines for Further User to assess whether the work is performed according to conditions specified in the Exposure Scenario

No additional risk management measures are available beside the ones specified above. See chemical goggles above

5 Additional good practice hint beside Chemical Safety Assessment REACH

Note: The measures specified in this chapter have not been taken into account while estimating exposure referring to the above exposure scenario. These are not subject to the obligations specified in article 37 (4) of REACH regulation.

Additional good practice recommendations (operating conditions and risk management measures) provided in the safety data sheets, such as:

- limitation, as applicable;
- limitation to minimum the number of exposed workers;
- segregation of issue;
- effective exhaust
- general ventilation;
- minimum servicing staff;
- avoiding contact with contaminated tools and objects;
- regular cleaning of equipment and place of work;
- management / supervision
- staff training;
- personal hygiene;



EXPOSURE SCENARIO SUPERPHOSPHATE ES3

1. Name of the scenario: ES3 Professional application for preparation of mixtures and end use	
Application sector: SU 22 Public domain (administration, education, entertainment, service, craft art)	
Product category PC 12 Fertilizers PC 20 Products such as pH regulators, flocculating agents, neutralizing agents, other not specified uses	
Process category PROC 2 Use in a closed, continuous process with possible sporadic, controlled exposure (e.g. sampling). PROC 8a Transfer of substances or preparations (loading/unloading) from/to tanks/ large containers at places not intended for this purpose. PROC 8b Transfer of substances or preparations (loading/unloading) from/to tanks/ large containers at places intended for this purpose. PROC 9 Transfer of substances or preparations to small containers (dedicated filling line, including weighing). PROC 13 Articles processing by dipping and pouring over. Industrial and non-industrial conditions; PROC 19 Manual mixing causing direct contact with only personal precautions available. Non-industrial surroundings	
Environmental release category ERC 8b Wide dispersive indoor use of reactive substances in open systems. ERC 8d Wide dispersive outdoor use of auxiliary means in open systems. ERC 8e Wide dispersive outdoor use of reactive substances in open systems.	
2 Operating conditions and risk management means	
2.1 Environmental exposure control	
Environmental release during production ERC 8b Wide dispersive indoor use of reactive substances in open systems. ERC 8d Wide dispersive outdoor use of auxiliary means in open systems. ERC 8e Wide dispersive outdoor use of reactive substances in open systems. The effect of the released substance on the environment has not been assessed because the substance does not meet the criteria of a substance hazardous to the environment	
2.2 Workers exposure control during professional use in preparing mixtures and end use	
All process categories are covered by this scenario because operating conditions (OC) and risk management measures (RMM) for PROC 2/8a/8b/9/13/19 are identical.	
Product characteristics	
<i>Conditions concerning the product, e.g. substance concentration in the preparation, physical state of that preparation (solid, liquid; if solid: dusting level), package construction influencing the exposure</i>	Solid, low dustiness risk Liquid > 25% of the substance in a product
Used quantities	
<i>Quantities used at the work place; Note: this information is often not useful for the assessment of worker's exposure</i>	Not applicable
Frequency and use/exposure duration	
<i>Exposure duration (e.g. number of hours per shift) and frequency (e.g. single or repeated cases)</i>	Over 4 h / day

Human factors which are not affected by risk management	
<i>Special use conditions, e.g. potentially endangered bodily parts, increased breath volume under specified working conditions</i>	Not applicable
Other operating conditions having effect on workers exposure	
<i>Other operating conditions, e.g. facility cubic capacity, the work is performed outdoors/ indoors, process conditions related to temperature and pressure</i>	Work indoors or outdoors
Technical conditions and measures implemented at the process stage (source) to prevent release	
<i>The method of conducting the process to prevent release and workers exposure; also covers conditions ensuring strict air-tight sealing; specification of air-tight sealing effectiveness (e.g. loss or exposure)</i>	Not applicable
Technical conditions and dispersion control measures from source towards workers	
<i>Technical controls, ventilation type: general, uptake; specification of measure effectiveness</i>	Proper limitation General ventilation Avoid spillage. Use special feeders and pumps to prevent stains/ leaks/ exposure
Organization measures implemented to prevent/limit release, dispersion and exposure	
<i>Specified organisation measures or measures useful in functioning of specific technical means. These means should be specified in order to indicate strictly controlled conditions</i>	Not applicable
Conditions and measured related to personal precautions, hygiene and health assessment	
<i>Personal precautions, e.g. wearing gloves, skin protection of the entire body, goggles, breathing mask; specify effectiveness of a given measure</i>	Protective glasses in order to limit the exposure to the slight level

3 Assessment of exposure and reference to its source

Environmental exposure

The effect of the released substance on the environment has not been assessed because the substance does not meet the criteria of a substance hazardous to the environment

Worker exposure

Qualitative approach was the grounds for specification of safe use of the substance by the users. Main toxicological effect . eyes irritation, for which DNEL value cannot be determined because no dose-answer information is available. Minimal effects of chronic exposure were recorded only with very high concentration levels of the substance, so under normal conditions of use of the substance humans are not exposed, so the quantitative assessment is not required.

4 Guidelines for Further User to assess whether the work is performed according to conditions specified in the Exposure Scenario

No additional risk management measures are available beside the ones specified above. See chemical goggles above

5 Additional good practice hint beside Chemical Safety Assessment REACH

Note: The measures specified in this chapter have not been taken into account while estimating exposure referring to the above exposure scenario. These are not subject to the obligations specified in article 37 (4) of REACH regulation.

Additional good practice recommendations (operating conditions and risk management measures) provided in the safety data sheets, such as:

- limitation, as applicable;
- limitation to minimum the number of exposed workers;
- segregation of issue;
- effective exhaust
- general ventilation;
- minimum servicing staff;
- avoiding contact with contaminated tools and objects;
- regular cleaning of equipment and place of work;
- management / supervision
- staff training;
- personal hygiene;



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EXPOSURE SCENARIO SUPERPHOSPHATE ES4

1. Name of the scenario: ES4 Final use by the consumer as fertilizers and other products	
Application sector: SU 21 Consumer use (households - general society - consumers)	
Product category PC 12 Fertilizers	
Environmental release category ERC 8b Wide dispersive indoor use of reactive substances in open systems. ERC 8e Wide dispersive outdoor use of reactive substances in open systems.	
2 Operating conditions and risk management means	
2.1 Environmental exposure control	
Environmental release during production ERC 8b Wide dispersive indoor use of reactive substances in open systems. ERC 8d Wide dispersive outdoor use of auxiliary means in open systems. The effect of the released substance on the environment has not been assessed because the substance does not meet the criteria of a substance hazardous to the environment	
2.2 Consumer exposure control - end use as fertilizers and other products	
All PC 12 product categories are covered by this scenario because operating conditions (OC) and risk management measures (RMM) are identical. SSP is classified as a substance causing serious eye damage (R41 according to 67/548/EEC and H318 according to CLP). Exposure to eye irritation may take place during use of diluted superphosphate by consumers. However, dilution may cause that the concentration of substances in the final product will reach the level which does not cause eye irritation.	
Product characteristics	
<i>Conditions concerning the product, e.g. substance concentration in the preparation, physical state of that preparation (solid, liquid; if solid: dusting level), package construction influencing the exposure</i>	Solid, low dustiness risk Liquid > 25% of the substance in a product Products containing SSP: ~ 1% and <1%
Used quantities	
<i>Quantities used per unit</i>	Not applicable
Frequency and use/exposure duration	
<i>Exposure duration during the occurrence and occurrence frequency</i>	Not applicable
Human factors which are not affected by risk management	
<i>Specific use conditions, e.g. potentially exposed bodily parts, potentially exposed population (children, adults)</i>	Not applicable
Other operating conditions having effect on consumers exposure	
<i>Other operating conditions, e.g. rooms cubic capacity, air exchange rate, indoors/outdoors application</i>	indoors or outdoors

Conditions and measures related to information and hints concerning behaviour for consumers	
<i>Safety information which is to be provided to consumers in order to control exposure, e.g. technical instructions, hints</i>	Avoid sprinkling (dispersion)
Conditions and measured related to personal precautions, hygiene and health assessment	
<i>Personal precautions, e.g. wearing gloves, skin protection of the entire body, goggles, breathing mask; specify effectiveness of a given measure</i>	<ol style="list-style-type: none"> 1. ~ 1% SSP: use protective glasses in order to limit the exposure to the slight level 2. <1% SSP: personal precautions are not required 3. Instruction is provided to consumers through label elements

3 Assessment of exposure and reference to its source	
Environmental exposure	
The effect of the released substance on the environment has not been assessed because the substance does not meet the criteria of a substance hazardous to the environment	
Consumer exposure	
Qualitative approach was the grounds for specification of safe use of the substance by the users. Main toxicological effect . eyes irritation, for which DNEL value cannot be determined because no dose-answer information is available. Minimal effects of chronic exposure were recorded only with very high concentration levels of the substance, so under normal conditions of use of the substance humans are not exposed, so the quantitative assessment is not required.	

4 Guidelines for further user to assess whether the work is performed according to conditions specified in the exposure scenario	
No additional risk management measures are available beside the ones specified above.	
If ~ 1% SSP- use protective glasses	
If <1% SSP - personal precautions are not required	