Agrium Europe

SAFETY DATA SHEET

Compound Fertiliser, Granular, 15-15-15 (MOP)

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

1.1 Product identifier

Product name : Compound Fertiliser, Granular, 15-15-15 (MOP)

REACH Registration number

Registration number	Substance Identification
01-2119490981-27-XXXX 01-2119488166-29-XXXX 01-2119490974-22-XXXX 01-2119455044-46-XXXX Exempt from REACH registration according to Article 2 (7) (a) and (b), Annex V: Category:7, Naturally occurring substance, not chemically modified.	Ammonium nitrate Ammonium dihydrogen orthophosphate Diammonium hydrogenorthophosphate Ammonium sulphate Potassium chloride

Product code : 3295-29197; 3296-29197; 3297-29197; 3298-29197

Product description : EC FERTILISER Compound fertiliser, granular NPK 15-15-15 (MOP)

Product type : Solid.

Other means of identification : Not available.

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

Identified uses
Fertiliser.

Uses advised against	Reason
None.	Non-hazardous product.

1.3 Details of the supplier of the safety data sheet

Agrium Europe SA
Avenue Louise 326/36
1050 Bruxelles
Belgium
Tel : +32 (0)2 646 70 00
Fax : +32 (0)2 646 68 60
agrium@agrium.eu

e-mail address of person responsible for this SDS : productsafety@agrium.com

1.4 Emergency telephone number

National advisory body/Poison Centre

Telephone number : Agrium Safety Data Sheets are available in many languages at http://www.agrium.com/products/ae
Physicians, Poison Centres, or the Public may contact Agrium's Global Emergency Response Number 24/7/365 for service in many languages at +1 303 389 1654

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AZERBAIJAN +994 125 979 924
BELARUS +375 17 287 00 92
BELGIUM +32 70 245 245
BULGARIA +359 2 9154 378; +359 887 435 325
CROATIA +358 1 2348 342
CZECH REPUBLIC +420 22 49 195 93

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

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ESTONIA 16662; +372 62 69 379
FINLAND +358 9 471977
FRANCE
Angers +33 (0)2 41 48 21 21
Bordeaux +33 (0)5 56 96 40 80
Lille 0800 59 59 59 (national callers)
Lyon +33 (0)4 72 11 69 11
Marseille +33 (0)4 91 75 25 25
Nancy +33 (0)3 83 22 50 50
Paris +33 (0)1 40 05 48 48
Rennes +33 (0)2 99 59 22 22
Strasbourg +33 (0)3 88 37 37 37
Toulouse +33 (0)5 61 77 74 47
GEORGIA +995 99 53 33 20
GERMANY
Berlin +49 30 192 40
Bonn +49 228 192 40
Erfurt +49 361 730 730
Freiburg +49 761 192 40
Goettingen +49 551 192 40
Homburg (Saar) +49 6841 192 40
Mainz +49 6131 192 40
Munich +49 89 192 40
GREECE +30 21 07 79 37 77
HUNGARY +36 80 20 11 99
ICELAND +354 543 22 22
IRELAND +353 1 837 9964 (medical professionals) +353 1 809 2166 (public)
ISRAEL +972 4 854 19 00
ITALY
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Firenze +39 55 794 7819
Foggia +39 881 732 326
Genoa +39 10 563 62 45
Milan +39 02 6610 1029
Padova +39 49 827 50 78
Pavia +39 38 224 444
Rome +39 06 305 43 43
Turin +39 011 663 7637
KAZAKHSTAN +7 3272 925 868
LITHUANIA +370 5 236 20 52; +370 687 533 78
NETHERLANDS +31 30 274 88 88
NORWAY +47 22 59 13 00
POLAND
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Krakow +48 12 411 99 99
Lòdz +48 42 63 14 724
Sosnowiec +48 32 266 11 45
Warszawa +48 22 619 66 54
Wroclaw +48 71 343 30 08
PORTUGAL 808 250 143 (national callers)
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RUSSIAN FEDERATION
Ekaterinburg +7 343 229 98 57
Moscow +7 495 628 1687
Saint-Petersburg +7 921 757 3228
SERBIA +381 11 3608 440
SLOVAKIA +421 2 5477 4166
SLOVENIA +386 41 635 500
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TURKEY +90 0312 433 70 01 or 0 800 314 7900

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Belfast 844 892 0111
Birmingham 844 892 0111
Edinburgh 844 892 0111
Newcastle Upon Tyne +44 191 2606182; +44 191 2606180
Penarth 844 892 0111

Supplier

Telephone number : Agrium Europe SA
EMERGENCY TELEPHONE NUMBERS:
Transportation: 00-1-303-389-1654
Medical: 00-1-303-389-1654

Hours of operation : 24/7/365

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Product definition : Mixture

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

Eye Irrit. 2, H319

2.2 Label elements

Hazard statements : Causes serious eye irritation.

Prevention : Wear eye or face protection. Wash hands thoroughly after handling.

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

Storage : Not applicable.

Disposal : Not applicable.

Special packaging requirements

Containers to be fitted with child-resistant fastenings : Not applicable.

Tactile warning of danger : Not applicable.

2.3 Other hazards

Other hazards which do not result in classification : None known.

SECTION 3: Composition/information on ingredients

SECTION 3: Composition/information on ingredients

Product/ingredient name	Identifiers	%	Classification Regulation (EC) No. 1272/2008 [CLP]	Type
Europe				
Diammonium phosphate	REACH Reg.#: 01-2119490974-22-XXXX EC No.: 231-987-8 CAS #: 7783-28-0	0-31	Non-hazardous substance.	[A]
Ammonium dihydrogen orthophosphate	REACH Reg.#: 01-2119488166-29-XXXX EC No.: 231-764-5 CAS #: 7722-76-1	0-29	Non-hazardous substance.	[A]
Potassium chloride	EC No.: 231-211-8 CAS #: 7447-40-7	25	Non-hazardous substance.	[A]
Ammonium nitrate	REACH Reg.#: 01-2119490981-27-XXXX EC No.: 229-347-8 CAS: 6484-52-2	13	Ox. Sol. 3, H272 Eye Irrit. 2, H319	[A]
Ammonium chloride	EC No.: 235-186-4 CAS: 12125-02-9	2-9	Acute Tox. 4, H302 Eye Irrit. 2, H319 **See Section 16 for the full text of the H statements declared above.**	[B]

Type

[A] Constituent
[B] Impurity
[C] Stabilising additive

Occupational exposure limits, if available, are listed in Section 8.

SECTION 4: First aid measures

4.1 Description of first aid measures

Eye contact : Begin eye irrigation immediately. Eye exposures to nitrates may require medical evaluation following decontamination if pain or irritation persists. Immediately rinse eyes with large quantities of water or saline for a minimum of 15 minutes. If possible, remove contact lenses being careful not to cause additional eye damage. If the initial water supply is insufficient, keep the affected area wet with a moist cloth and transfer the person to the nearest place where rinsing can be continued for the recommended length of time. For additional advice call the medical emergency number on this SDS or your poison center or physician.

Inhalation : Remove person to fresh air. No known significant effects. Seek medical attention for any signs of wheezing and/or breathing difficulties. For additional advice call the medical emergency number on this SDS or your poison center or medical provider.

Skin contact : No known significant effects. Rinse the affected areas with water. Remove contaminated clothing, jewelry, and shoes. Wash/clean items before reuse. Seek medical attention for persistent skin pain or irritation. For additional advice call the medical emergency number on this SDS or your poison center or physician.

Ingestion : Ammonium nitrate-based fertilizer. May be irritating to mouth, throat and stomach. May cause methemoglobinemia (a condition that interferes with the oxygen-carrying capacity of the blood) if ingested in large quantities or over a prolonged period of time. Oral exposures: if the affected person requires CPR, avoid mouth to mouth contact. Do not induce vomiting. If vomiting occurs, attempt to keep head lower than chest so that vomit does not enter the lungs. Wash (decontaminate) face and mouth with water to remove visible material. If the exposed person is conscious and can swallow, give 1-2 sips of water. Do not give anything else by mouth. Loosen tight clothing such as collar, tie, belt or waistband to prevent any breathing restrictions. Call for emergency transportation to a hospital if the exposed person feels sick or has breathing difficulties, or a large amount is suspected ingested. For additional advice, call the medical emergency number on this SDS or your poison center or physician.

SECTION 4: First aid measures

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. Mouth-to-mouth resuscitation of oral exposure patients is not recommended. First-aiders with contaminated clothing should be properly decontaminated.

4.2 Most important symptoms and effects, both acute and delayed

Potential acute health effects

Eye contact : Causes serious eye irritation.

Inhalation : Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.

Skin contact : No known significant effects or critical hazards.

Ingestion : May be rritating to the digestive tract. May cause nausea, vomiting, diarrhea, and abdominal pain. May cause methemoglobinemia (a condition that interferes with the oxygen-carrying capacity of the blood) if ingested in large quantities or over a prolonged period of time. Persons with methemoglobinemia may have blue tinge color to lips, nails, and skin. Also they may have shortness of breath or trouble breathing. Persons more susceptible to methemoglobinemia include: very young (less than 3 months), the elderly, those with chronic obstructive pulmonary disease (COPD), anemia, coronary artery disease, recent surgery or infection, and those with a genetic deficiency of G-6-PD.

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following:
pain or irritation
watering
redness

Inhalation : The substance will not burn. Undergoes thermal decomposition at elevated temperatures to release toxic and flammable gases. Adverse symptoms may include the following:
headache
respiratory tract irritation
coughing

Skin contact : No specific data.

Ingestion : Over-exposure by ingestion is unlikely under normal working conditions. Adverse symptoms may include the following:
nausea or vomiting
stomach pains
diarrhoea
Methemoglobinemia (see Acute Health Effects)

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician : In case of inhalation of decomposition products (carbon monoxide, carbon dioxide, nitrogen oxides) in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for up to 72 hours. In cases of suspected methemoglobinemia, monitor methemoglobin blood levels. Treatment is supportive; methylene blue may be indicated based on patient severity. 24 Hr Medical Emergency telephone number for professional support: 00-1-303-389-1654.

Specific treatments : Call the medical emergency number on this SDS or your poison center or doctor immediately if large quantities have been ingested. In cases of suspected methemoglobinemia, methylene blue may be indicated based on patient severity.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media : Non-flammable. Material will not burn. Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media : Do not attempt to smother the fire.

5.2 Special hazards arising from the substance or mixture

SECTION 5: Firefighting measures

Hazards from the substance or mixture : Contains an oxidizing substance. May intensify fire.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
sulphur oxides (SO_2, SO_3, etc.)
Ammonia
Nitrogen oxides

5.3 Advice for firefighters

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

Special protective equipment for fire-fighters : 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.

Additional information : Fight fire from protected location or maximum possible distance. Contain and collect the water used to fight the fire for later treatment and disposal.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Keep unnecessary and unprotected personnel from entering. Put on appropriate personal protective equipment. Avoid creating dusty conditions and prevent wind dispersal.

For emergency responders : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

6.2 Environmental precautions : Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

6.3 Methods and material for containment and cleaning up

Small spill : Move containers from spill area. Use appropriate tools to transfer the spilt solid to a convenient waste disposal container. Place spilt material in an appropriate container for disposal.
or
Recover the material and use it for its intended purpose.

Large spill : No additional remark.

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.

SECTION 7: Handling and storage

If applicable: The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

7.1 Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

SECTION 7: Handling and storage

7.2 Conditions for safe storage, including any incompatibilities

Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Hygroscopic. Keep container tightly closed. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. May form steep piles that can collapse without warning when stored in bulk. Avoid forming steep slopes when removing product.

7.3 Specific end use(s)

Recommendations : See Annex to the Safety data sheet for additional information in the Exposure Scenario (s).

Industrial sector specific solutions : See Annex to the Safety data sheet for additional information in the Exposure Scenario (s).

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits

Product/ingredient name	Exposure limit values
Europe	
No exposure limit value known.	
Belgium	
Ammonium chloride	**Lijst Grenswaarden / Valeurs Limites (Belgium, 4/2014).** TWA: 10 mg/m³ 8 hours. Form: fume STEL: 20 mg/m³ 15 minutes. Form: fume
Bulgaria	
Potassium chloride	**България Министерство на труда и социалната политика и Министерството на здравеопазването (Bulgaria, 1/2012).** Limit value 8 hours: 5 mg/m³ 8 hours.
Ammonium chloride	**България Министерство на труда и социалната политика и Министерството на здравеопазването (Bulgaria, 1/2012).** Limit value 8 hours: 10 mg/m³ 8 hours.
Croatia	
Ammonium chloride	**MinGoRP GVI/KGVI (Croatia, 6/2013).** STELV: 20 mg/m³ 15 minutes. ELV: 10 mg/m³ 8 hours.
Czech Republic	
Ammonium nitrate	**178/2001 (Czech Republic, 12/2007).** TWA: 10 mg/m³ 8 hour(s). Form: dust
Denmark	
Ammonium chloride	**Arbejdstilsynet (Denmark, 10/2012).** TWA: 10 mg/m³ 8 hours. Form: fume
Finland	
Ammonium chloride	**Työterveyslaitos, Sosiaali- ja terveysministeriö (Finland, 3/2014).** TWA: 10 mg/m³ 8 hours. Form: dust
France	
Ammonium chloride	**Ministère du travail (France, 7/2012). Notes: Ministry of Labour (Brochure INRS Ed 984, July 2012). Indicative exposure limits** TWA: 10 mg/m³ 8 hours. Form: fume
Greece	
Ammonium chloride	**Υπουργείο Εργασίας και Κοινωνικών Υποθέσεων (Greece, 2/2012).** TWA: 10 mg/m³ 8 hours. Form: fume STEL: 20 mg/m³ 15 minutes. Form: fume
Iceland	

SECTION 8: Exposure controls/personal protection

Ammonium chloride	**Velferdarráðuneytið, Mengunarmarkaskrá (Iceland, 4/2009).** TWA: 10 mg/m³ 8 hours. Form: fume
Ireland	
Ammonium chloride	**NAOSH (Ireland, 12/2011).** OELV-8hr: 10 mg/m³ 8 hours. Form: fume OELV-15min: 20 mg/m³ 15 minutes. Form: fume
Latvia	
Potassium chloride	**Ministru kabineta - AER (Latvia, 2/2011).** TWA: 5 mg/m³ 8 hours.
Diammonium hydrogenorthophosphate	**Ministru kabineta - AER (Latvia, 2/2011).** TWA: 6 mg/m³ 8 hours.
Ammonium chloride	**Ministru kabineta - AER (Latvia, 2/2011).** TWA: 10 mg/m³ 8 hours.
Lithuania	
Potassium chloride	**Lietuvos Higienos Normos HN 23 (Lithuania, 10/2007).** TWA: 5 mg/m³ 8 hours.
Ammonium chloride	**Lietuvos Higienos Normos HN 23 (Lithuania, 10/2007).** TWA: 10 mg/m³ 8 hours.
Norway	
Ammonium chloride	**FOR-2011-12-06-1358 (Norway, 1/2013).** TWA: 10 mg/m³ 8 hours.
Poland	
Ammonium chloride	**Rozporzadzenie Ministra Pracy i Polityki Spolecznej (Dz.U. 2014 poz. 817) (Poland, 6/2014).** TWA: 10 mg/m³ 8 hours. Form: vapor and inhalable fraction STEL: 20 mg/m³ 15 minutes. Form: vapor and inhalable fraction
Portugal	
Ammonium chloride	**Instituto Português da Qualidade (Portugal, 3/2007).** TWA: 10 mg/m³ 8 hours. Form: fume STEL: 20 mg/m³ 15 minutes. Form: fume
Romania	
Ammonium chloride	**HG 1218/2006 cu modificările şi completările ulterioare (Romania, 1/2012).** VLA: 5 mg/m³ 8 hours. Short term: 10 mg/m³ 15 minutes.
Spain	
Ammonium chloride	**INSHT (Spain, 1/2014).** TWA: 10 mg/m³ 8 hours. Form: fume STEL: 20 mg/m³ 15 minutes. Form: fume
Switzerland	
Ammonium chloride	**SUVA (Switzerland, 1/2014).** TWA: 10 mg/m³ 8 hours. Form: Inhalable dust (total dust) TWA: 3 mg/m³ 8 hours. Form: Respirable dust (particulate matter)
Turkey	
Ammonium chloride	**NIOSH REL (United States, 10/2013).** TWA: 10 mg/m³ 10 hours. Form: Fume STEL: 20 mg/m³ 15 minutes. Form: Fume
United Kingdom (UK)	
Ammonium chloride	**EH40/2005 WELs (United Kingdom (UK), 12/2011).** STEL: 20 mg/m³ 15 minutes. Form: Fume TWA: 10 mg/m³ 8 hours. Form: Fume

Recommended monitoring procedures : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to European Standard EN 689 for methods for the assessment of exposure by inhalation to chemical agents and national guidance documents for methods for the determination of hazardous substances.

SECTION 8: Exposure controls/personal protection

DNELs/DMELs

Product/ingredient name	Type	Exposure	Value	Population	Effects
Ammonium nitrate	DNEL	Long term Dermal	5,1 mg/kg bw/day	Workers	Systemic
Ammonium nitrate	DNEL	Long term Inhalation	36 mg/m³	Workers	Systemic
Ammonium dihydrogen orthophosphate	DNEL	Long term Inhalation	6,1 mg/m³	Workers	Systemic

DNEL/DMEL Summary : Very low toxicity to humans or animals.

PNECs

Product/ingredient name	Compartment Detail	Value	Method Detail
Ammonium nitrate	Fresh water	0,45 mg/l	Assessment Factors

PNEC Summary : Very low acute toxicity to fish.

8.2 Exposure controls

Appropriate engineering controls : No special ventilation requirements. Good general ventilation should be sufficient to control worker exposure to airborne contaminants. If this product contains ingredients with exposure limits, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure below any recommended or statutory limits.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Goggles, face shield or other full-face protection should be worn if there is a risk of direct exposure to dust.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels. Dispose of waste according to applicable legislation.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

Physical state : Solid. [Granular solid. Solid beads.]

Colour : Greyish-white.

Odour : Odourless.

Odour threshold : Not available.

pH : Not available.

Melting point/freezing point : 169.6°C

SECTION 9: Physical and chemical properties

Initial boiling point and boiling range	:	Decomposition temperature: >210°C
Flash point	:	Not applicable. Non-flammable.
Evaporation rate	:	Not applicable. Solid beads.
Flammability (solid, gas)	:	Non-flammable. May intensify fire; oxidiser.
Burning time	:	Not applicable. Non-combustible. Decomposes.
Burning rate	:	Not applicable. Non-combustible. Decomposes.
Upper/lower flammability or explosive limits	:	Not applicable. Inorganic salt.
Vapour pressure	:	Not available.
Vapour density	:	Not available.
Relative density	:	Not available.
Solubility(ies)	:	Easily soluble in the following materials: hot water. Soluble in the following materials: cold water.
Partition coefficient: n-octanol/ water	:	Not available.
Auto-ignition temperature	:	Not applicable.
Decomposition temperature	:	>210°C
Viscosity	:	Not applicable. Solid.
Explosive properties	:	Not applicable.
Oxidising properties	:	Contains an oxidizing substance. May intensify fire.

9.2 Other information

No additional information.

SECTION 10: Stability and reactivity

10.1 Reactivity	:	Stable under recommended storage and handling conditions (see Section 7).
10.2 Chemical stability	:	The product is stable.
10.3 Possibility of hazardous reactions	:	Hazardous reactions or instability may occur under certain conditions of storage or use. Conditions may include the following: contact with combustible materials Reactions may include the following: risk of causing or intensifying fire Under normal conditions of storage and use, hazardous reactions will not occur.
10.4 Conditions to avoid	:	Decomposes on heating. Avoid confinement.
10.5 Incompatible materials	:	Moisture-sensitive material. Hygroscopic. Keep container tightly closed. Avoid contamination by any source including metals, dust and organic materials.
10.6 Hazardous decomposition products	:	Under normal conditions of storage and use, hazardous decomposition products should not be produced. In a fire, decomposition may produce toxic gases/fumes.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

SECTION 11: Toxicological information

Product/ingredient name	Result	Species	Dose	Exposure
Ammonium nitrate	LD50 Dermal	Rat - Male, Female	>5000 mg/kg	-
	LD50 Oral	Rat - Male, Female	2950 mg/kg	-
Potassium chloride	LD50 Oral	Rat	2600 mg/kg	-
Diammonium hydrogenorthophosphate	LC50 Inhalation Dusts and mists	Rat - Male, Female	>5 mg/l	4 hours
	LD50 Dermal	Rat - Male, Female	>5000 mg/kg	-
	LD50 Oral	Rat - Male, Female	>2000 mg/kg	-
Ammonium chloride	LD50 Oral	Rat	1650 mg/kg	-

Conclusion/Summary : Not available. Very low toxicity to humans or animals.

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Ammonium nitrate	Skin	Rabbit	0	-	72 hours
	Eyes - Oedema of the conjunctivae	Rabbit	3	-	3 days
Potassium chloride	Eyes	Rabbit	0	24 hours 500 milligrams	-
Diammonium hydrogenorthophosphate	Skin	Rabbit	0	72 hours	-
	Eyes	Rabbit	0	72 hours	-
Ammonium chloride	Eyes - Mild irritant	Rabbit	-	24 hours 500 milligrams	-

Conclusion/Summary

Skin : Non-irritating to the skin.

Eyes : Irritating to the eyes.

Sensitisation

Product/ingredient name	Route of exposure	Species	Result
Ammonium nitrate	skin	Mouse	Not sensitizing
Diammonium hydrogenorthophosphate	skin	Mouse	Not sensitizing

Conclusion/Summary

Skin : Non-sensitiser.

Respiratory : Non-sensitiser.

Mutagenicity

Product/ingredient name	Test	Experiment	Result
Ammonium nitrate	OECD 471 Bacterial Reverse Mutation Test	Experiment: In vitro Subject: Bacteria	Negative
	OECD 476 *In vitro* Mammalian Cell Gene Mutation Test	Experiment: In vitro Subject: Mammalian-Animal	Negative
Potassium chloride	-	Subject: Bacteria	Negative
Diammonium hydrogenorthophosphate	471 Bacterial Reverse Mutation Test	Subject: Bacteria	Negative

Conclusion/Summary : No mutagenic effect.

Carcinogenicity

Conclusion/Summary : Potential for nitrosamine formation if ingested. Do not ingest.Potential for nitrosamine formation

Reproductive toxicity

SECTION 11: Toxicological information

Product/ingredient name	Maternal toxicity	Fertility	Developmental toxin	Species	Dose	Exposure
Ammonium nitrate	Negative	Negative	Negative	Rat - Male, Female	Oral: 1500 mg/kg	53 days; 7 days per week
Diammonium hydrogenorthophosphate	Negative	Negative	Negative	Rat - Male, Female	Oral: 1500 mg/kg	-

Conclusion/Summary : Not considered to be toxic to the reproductive system.

Teratogenicity

Product/ingredient name	Result	Species	Dose	Exposure
Ammonium nitrate	Negative - Oral	Rat - Female	1500 mg/kg	53 days
Potassium chloride	Negative - Oral	Rat - Female	310 mg/m³	-

Conclusion/Summary : No known significant effects or critical hazards.

Information on likely routes of exposure : Not available.

Potential acute health effects

Eye contact : Causes serious eye irritation.

Inhalation : Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.

Skin contact : No known significant effects or critical hazards.

Ingestion : May be rritating to the digestive tract. May cause nausea, vomiting, diarrhea, and abdominal pain. May cause methemoglobinemia (a condition that interferes with the oxygen-carrying capacity of the blood) if ingested in large quantities or over a prolonged period of time. Persons with methemoglobinemia may have blue tinge color to lips, nails, and skin. Also they may have shortness of breath or trouble breathing. Persons more susceptible to methemoglobinemia include: very young (less than 3 months), the elderly, those with chronic obstructive pulmonary disease (COPD), anemia, coronary artery disease, recent surgery or infection, and those with a genetic deficiency of G-6-PD.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : Adverse symptoms may include the following:
pain or irritation
watering
redness

Inhalation : The substance will not burn. Undergoes thermal decomposition at elevated temperatures to release toxic and flammable gases. Adverse symptoms may include the following:
headache
respiratory tract irritation
coughing

Skin contact : No specific data.

Ingestion : Over-exposure by ingestion is unlikely under normal working conditions. Adverse symptoms may include the following:
nausea or vomiting
stomach pains
diarrhoea
Methemoglobinemia (see Acute Health Effects)

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Short term exposure

Potential immediate effects : Eye irritation
Infant-methaemoglobinaemia

Potential delayed effects : Not available.

SECTION 11: Toxicological information

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

Product/ingredient name	Result	Species	Dose	Exposure
Ammonium nitrate	Chronic NOAEL Oral	Rat - Male, Female	256 mg/kg	-

Conclusion/Summary : Not available.

General : No known significant effects or critical hazards.

Carcinogenicity : Potential for nitrosamine formation if ingested. Do not ingest.Potential for nitrosamine formation

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : No known significant effects or critical hazards.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Distribution : Systemic

Other information : Not available.

SECTION 12: Ecological information

12.1 Toxicity

Product/ingredient name	Result	Species	Exposure
Ammonium nitrate	NOEC >1700 mg/l Marine water	Algae	10 days
	Acute EC50 490 mg/l Fresh water	Daphnia	48 hours
	Acute LC50 447 mg/l Fresh water	Fish	48 hours
	Chronic NOEC 6 to 12 mg/l Fresh water	Crustaceans - Cladocera	21 days
Potassium chloride	Acute EC50 1337000 µg/l Fresh water	Algae - Navicula seminulum	96 hours
	Acute EC50 9.24 g/L Fresh water	Algae - Desmodesmus subspicatus	72 hours
	Acute LC50 9.68 mg/l Fresh water	Crustaceans - Pseudosida ramosa - Neonate	48 hours
	Acute LC50 30.1 mg/l Fresh water	Daphnia - Moinodaphnia macleayi - Neonate	48 hours
	Acute LC50 435000 µg/l Fresh water	Fish - Gambusia affinis - Adult	96 hours
	Chronic NOEC 240.45 mg/l Marine water	Crustaceans - Americamysis bahia	48 hours
Diammonium hydrogenorthophosphate	Acute LC50 1700 mg/l Fresh water	Fish - Cirrhinus mrigala/L. Rohita - Fry	96 hours

Conclusion/Summary : Based on available data, the classification criteria are not met.

12.2 Persistence and degradability

Conclusion/Summary : Not available.

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
Ammonium nitrate	-	-	Readily
Potassium chloride	-	-	Readily
Diammonium hydrogenorthophosphate	-	-	Readily

12.3 Bioaccumulative potential

Product/ingredient name	$LogP_{ow}$	BCF	Potential
Ammonium chloride	-3.2	-	low

SECTION 12: Ecological information

12.4 Mobility in soil

Soil/water partition coefficient (K_{OC}) : Not applicable. Inorganic salt. Bioaccumulative potential - low

Mobility : Not available.

12.5 Results of PBT and vPvB assessment

PBT : Not applicable. Inorganic salt.

vPvB : Not applicable. Inorganic salt.

12.6 Other adverse effects : No known significant effects or critical hazards.

SECTION 13: Disposal considerations

If applicable: The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

13.1 Waste treatment methods

Product

Methods of disposal : The generation of waste should be avoided or minimised wherever possible. Significant quantities of waste product residues should not be disposed of via the foul sewer but processed in a suitable effluent treatment plant. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. 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.

Hazardous waste : Ensure all waste water is collected and treated via a waste water treatment plant. Dispose of waste product or used containers according to local regulations.

European waste catalogue (EWC)

Waste code	Waste designation
06 10 02*	Fertiliser waste

Packaging

Methods of disposal : The generation of waste should be avoided or minimised wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

Special precautions : This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

SECTION 14: Transport information

	ADR/RID	ADN	IMDG	IATA
14.1 UN number	Not regulated.	Not regulated.	Not regulated.	Not regulated.
14.2 UN proper shipping name	-	-	-	-
14.3 Transport hazard class(es)	-	-	-	-
14.4 Packing group	-	-	-	-
14.5 Environmental hazards	No.	No.	No.	No.
Additional information	-	-	-	-

SECTION 14: Transport information

14.6 Special precautions for user : Not available.

SECTION 15: Regulatory information

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

EU Regulation (EC) No. 1907/2006 (REACH)

Annex XIV - List of substances subject to authorisation

Annex XIV

None of the components are listed.

Substances of very high concern

None of the components are listed.

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles : Not applicable.

Other EU regulations

Europe inventory : This material is listed or exempted.

National regulations

Denmark

France

Reinforced medical surveillance : Act of July 11, 1977 determining the list of activities which require reinforced medical surveillance: not applicable

Germany

Storage class (TRGS 510) : Refer to TRGS 511 Annex 1(5.3): Subgroup:B II

Hazardous incident ordinance : Applicable. TRGS 511: Annex 1 Number 5 Ammonium nitrate

Hazard class for water : 1 Appendix No. 2

Technical instruction on air quality control : TA-Luft Number 5.2.1

Italy

D.Lgs. 152/06 : Not classified.

Biocidal products regulation : Not applicable.

Ordinance on Thermoset Plastics : Not applicable.

Thermoset plastic waste : Not available.

Waste group : Not available.

Switzerland

VOC content : Exempt.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol (Annexes A, B, C, E)

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Inform Consent (PIC)

SECTION 15: Regulatory information

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

15.2 Chemical safety assessment : Complete.

SECTION 16: Other information

Revision comments : Reference to classifications under Directive 1999/45/EC have been removed in accordance with current regulatory requirements given in Regulation (EC) No. 1272/2008, and Regulation (EC) No. 1907/2006.

Indicates information that has changed from previously issued version.

Abbreviations and acronyms : ATE = Acute Toxicity Estimate
CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]
DMEL = Derived Minimal Effect Level
DNEL = Derived No Effect Level
EUH statement = CLP-specific Hazard statement
PBT = Persistent, Bioaccumulative and Toxic
PNEC = Predicted No Effect Concentration
RRN = REACH Registration Number
vPvB = Very Persistent and Very Bioaccumulative

Key literature references and sources for data : REGULATION (EC) No 1907/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL OF 18 DECEMBER 2006, with successive adaptations, amendments, and corrigenda.
REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL OF 16 DECEMBER 2008, with successive adaptations, amendments, and corrigenda.
ECHA, European Chemicals Agency, Classification and Labelling Database
DIRECTIVE 2012/18/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL OF 4 JULY 2012
European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR), latest revision.
Directive 2008/68/EC of the European Parliament and of the Council of 24 September 2008 on the inland transport of dangerous goods, with successive amendments.
REGULATION (EC) No 2003/2003 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL OF 13 OCTOBER 2003 RELATING TO FERTILISERS, with successive adaptations, amendments, and corrigenda.
American Conference of Governmental Industrial Hygienists, Threshold Limit Values for Chemical Substances, latest edition.
Corrosion Data Survey, Sixth Edition, 1985, National Association of Corrosion Engineers
ERG 2012 Emergency Response Guidebook
IARC Monographs on the Evaluation of Carcinogenic Risks to Humans.
The Fertilizer Institute, Toxicity Testing Results, March 2003
Substance Information Exchange Forum Database

Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Classification	Justification
Eye Irrit. 2, H319	On basis of test data

Europe

Full text of abbreviated H statements :

H272	May intensify fire; oxidiser.
H302	Harmful if swallowed.
H319	Causes serious eye irritation.

Full text of classifications [CLP/GHS] :

Eye Irrit. 2, H319	SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2
Acute Tox. 4, H302	ACUTE TOXICITY - Category 4
Ox. Sol. 3, H272	OXIDIZING SOLIDS - Category 3

Date of printing : 9/8/2016

SECTION 16: Other information

Date of issue/ Date of revision	:	9/8/2016
Date of previous issue	:	8/18/2016
Version	:	3.2

Notice to reader
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Product definition : Mixture

Identification of the substance or mixture

Code : 3295-29197; 3296-29197; 3297-29197; 3298-29197

Product name : Compound Fetilizer, Granular, 15-15-15 M.O.P.

Section 1 - Title

Short title of the exposure scenario : Agrium AN NPK ES for Workers

List of use descriptors : **Identified use name:** Industrial use for the formulation of preparations, intermediate use, and end use in industrial settings.
Process Category: PROC08a, PROC08b, PROC09, PROC26
Substance supplied to that use in form of: As such
Sector of end use: SU01, SU03
Subsequent service life relevant for that use: No.
Environmental Release Category: ERC02, ERC08b
Market sector by type of chemical product: PC12
Article category related to subsequent service life: Not applicable.

Environmental contributing scenarios : **Not applicable.**

Health Contributing scenarios : **Bulk transfers -** PROC08a, PROC08b, PROC09, PROC26
Clean-down and maintenance of equipment - PROC08a, PROC08b, PROC09, PROC26
Product packaging - PROC09
Storage - PROC26

Number of the ES : 1

Processes and activities covered by the exposure scenario : Applicable to all identified Process Categories.
An environmental assessment has not been done as the substance does not meet the criteria for being classified as dangerous for the environment.

Section 2 - Exposure controls

Contributing exposure scenario controlling environmental exposure for 1: Not applicable.

Not applicable. Not classified as dangerous to the environment.

Contributing exposure scenario controlling worker exposure for 1: Bulk transfers

Product Characteristics : Solid, low dustiness.

Concentration of substance in mixture or article : Covers percentage substance in the product up to 100%

Physical state : Solid beads.

Dust : Solid, low dustiness.

Amounts used : Variable, from day to day.

Frequency and duration of use : Use duration (h/d): >4

Human factors not influenced by risk management : Not applicable.

Other operational conditions affecting worker exposure : Indoor or outdoor use Amounts used

Area of use: : Indoor and outdoor use.

Technical conditions and measures at process level (source) to prevent release : Not applicable.

Process control/change measures	:	Not applicable.
Technical conditions and measures to control dispersion from source towards the worker	:	Use appropriate containment to avoid environmental contamination. Provide enhanced general ventilation by mechanical means.
Engineering controls	:	Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.
Ventilation control measures	:	Provide adequate ventilation and, if possible, use or install internal exhaust systems.
Organisational measures to prevent/limit releases, dispersion and exposure	:	Not applicable.

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

Advice on general occupational hygiene	:	A washing facility or water for eye and skin cleaning purposes should be present. Brush off contaminated clothing. Ensure good industrial hygiene. Provide eye shower and mark its location conspicuously.
Personal protection	:	If operating conditions cause high dust concentrations to be produced, use dust goggles.
Respiratory protection	:	If ventilation is inadequate, use respirator that will protect against dust/mist.

Contributing exposure scenario controlling worker exposure for 2: Clean-down and maintenance of equipment

Product Characteristics	:	Solid, low dustiness.
Concentration of substance in mixture or article	:	Covers percentage substance in the product up to 100%
Physical state	:	Solid beads.
Dust	:	Solid, low dustiness.
Amounts used	:	Not applicable.
Frequency and duration of use	:	Use duration (h/d): >4
Human factors not influenced by risk management	:	Not applicable.
Other operational conditions affecting worker exposure	:	Indoor or outdoor use
Area of use:	:	Indoor and outdoor use.
Technical conditions and measures at process level (source) to prevent release	:	Restrict access while emptying or maintaining the unit. Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan. Since the emptied containers retain product residue, follow product insert warnings even after container is emptied.
Process control/change measures	:	These controls may include segregation of areas, access only to authorised persons, permit to work systems, confined space working procedures, and hazard awareness training.
Technical conditions and measures to control dispersion from source towards the worker	:	Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.
Engineering controls	:	Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.
Ventilation control measures	:	Provide adequate ventilation and, if possible, use or install internal exhaust systems.
Organisational measures to prevent/limit releases, dispersion and exposure	:	Not applicable.

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

Advice on general occupational hygiene	:	A washing facility or water for eye and skin cleaning purposes should be present. Brush off contaminated clothing. Pay attention to good general hygiene and housekeeping. Provide eye shower and mark its location conspicuously. When using do not eat or drink.
Personal protection	:	If operating conditions cause high dust concentrations to be produced, use dust goggles.
Respiratory protection	:	If ventilation is inadequate, use respirator that will protect against dust/mist.

Contributing exposure scenario controlling worker exposure for 3: Product packaging

Product Characteristics	:	Solid, low dustiness. Liquid.
Concentration of substance in mixture or article	:	Covers percentage substance in the product up to 100%
Physical state	:	Solid beads.
Dust	:	Solid, low dustiness.
Amounts used	:	Not applicable.
Frequency and duration of use	:	Use duration (h/d): >4
Human factors not influenced by risk management	:	Not applicable.
Other operational conditions affecting worker exposure	:	Indoor use
Area of use:	:	Indoor
Technical conditions and measures at process level (source) to prevent release	:	Not applicable.
Process control/change measures	:	Not applicable.
Technical conditions and measures to control dispersion from source towards the worker	:	Ensure the area is organised, well lit and ventilated with enough space to deal with spills easily.
Engineering controls	:	Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.
Ventilation control measures	:	Ensure sufficient ventilation when re-packing damaged packages. Only use product in a well-ventilated area.
Organisational measures to prevent/limit releases, dispersion and exposure	:	Not applicable.

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

Advice on general occupational hygiene	:	A washing facility or water for eye and skin cleaning purposes should be present. Brush off contaminated clothing. When using do not eat or drink.
Personal protection	:	If operating conditions cause high dust concentrations to be produced, use dust goggles.

Contributing exposure scenario controlling worker exposure for 4: Storage

Product Characteristics	:	Solid, low dustiness. Liquid.
Concentration of substance in mixture or article	:	Covers percentage substance in the product up to 100%
Physical state	:	Solid beads.
Dust	:	Solid, low dustiness.
Amounts used	:	Not applicable.
Frequency and duration of use	:	Use duration (h/d): >4

Human factors not influenced by risk management	:	Not applicable.
Other operational conditions affecting worker exposure	:	Indoor use
Area of use:	:	Indoor
Technical conditions and measures at process level (source) to prevent release	:	Not applicable.
Process control/change measures	:	Not applicable.
Technical conditions and measures to control dispersion from source towards the worker	:	Use appropriate containment to avoid environmental contamination. Provide enhanced general ventilation by mechanical means.
Engineering controls	:	Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.
Ventilation control measures	:	Provide adequate ventilation and, if possible, use or install internal exhaust systems.
Organisational measures to prevent/limit releases, dispersion and exposure	:	Not applicable.
Conditions and measures related to personal protection, hygiene and health evaluation		
Personal protection	:	If operating conditions cause high dust concentrations to be produced, use dust goggles.

Section 3 - Exposure estimation and reference to its source

Website:	:	Qualitative approach used to conclude safe use.

Exposure estimation and reference to its source - Environment: 5: Not applicable.

Exposure assessment (environment):	:	Qualitative approach used to conclude safe use.
Exposure estimation	:	Not available.

Exposure estimation and reference to its source - Workers:1: Bulk transfers

Exposure assessment (human):	:	Qualitative approach used to conclude safe use.
Exposure estimation	:	Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted.

Exposure estimation and reference to its source - Workers:2: Clean-down and maintenance of equipment

Exposure assessment (human):	:	Qualitative approach used to conclude safe use.
Exposure estimation	:	Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted.

Exposure estimation and reference to its source - Workers:3: Product packaging

Exposure assessment (human):	:	Qualitative approach used to conclude safe use.
Exposure estimation	:	Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted.

Exposure estimation and reference to its source - Workers:4: Storage

Exposure assessment (human):	:	Qualitative approach used to conclude safe use.
Exposure estimation	:	Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted.

Section 4 - Guidance to Downstream User to evaluate if he works inside the boundaries set by the ES

Environment	:	No additional risk management measures required.
Health	:	Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

Additional good practice advice beyond the REACH CSA

Environment	:	Use containment as appropriate. Good hygiene practices and housekeeping measures
Health	:	Not available.

Product definition : Mixture

Identification of the substance or mixture

Code : 3295-29197; 3296-29197; 3297-29197; 3298-29197

Product name : Compound Fetilizer, Granular, 15-15-15 M.O.P.

Section 1 - Title

Short title of the exposure scenario : Agrium AN NPK ES for Professionals

List of use descriptors : **Identified use name:** Professional use in formulation of preparations and end-use.
Process Category: PROC08a, PROC08b, PROC09, PROC26
Substance supplied to that use in form of: As such
Sector of end use: SU01
Subsequent service life relevant for that use: No.
Environmental Release Category: ERC08e
Market sector by type of chemical product: PC12

Environmental contributing scenarios : **An environmental assessment has not been done as the substance does not meet the criteria for being classified as dangerous for the environment.**

Health Contributing scenarios : **All process categories are addressed by this contributing scenario as all Operational Conditions and Risk Management Measures are identical.**

Number of the ES : 2

Processes and activities covered by the exposure scenario : Applicable to all identified Process Categories.

Section 2 - Exposure controls

Contributing scenario controlling environmental exposure for 1: An environmental assessment has not been done as the substance does not meet the criteria for being classified as dangerous for the environment.

Not applicable.

Contributing scenario controlling worker exposure for 1: All process categories are addressed by this contributing scenario as all Operational Conditions and Risk Management Measures are identical.

Product characteristics : Solid, low dustiness.

Concentration of substance in mixture or article : Covers percentage substance in the product up to 100%

Physical state : Solid beads.

Dust : Solid, low dustiness.

Amounts used : Variable.

Frequency and duration of use : >4 Hours per shift

Human factors not influenced by risk management : Not applicable.

Other given operational conditions affecting workers exposure : Indoor or outdoor use

Area of use: : Indoor and outdoor use.

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 : Use containment as appropriate. Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.

Engineering controls	:	Provide adequate ventilation.
Ventilation control measures	:	Provide adequate ventilation and, if possible, use or install internal exhaust systems.
Product substance-related measures	:	Avoid contact with eyes.
Organisational measures to prevent/limit releases, dispersion and exposure	:	Not applicable.

Conditions and measures related to personal protection and hygiene

Advice on general occupational hygiene	:	Avoid contact with eyes. Ensure good industrial hygiene. If operating conditions cause high dust concentrations to be produced, use dust goggles.
Personal protection	:	Use suitable eye protection. If operating conditions cause high dust concentrations to be produced, use dust goggles.

Section 3 - Exposure estimation and reference to its source

Website:	:	Qualitative approach used to conclude safe use.

Exposure estimation and reference to its source - Environment: 2: An environmental assessment has not been done as the substance does not meet the criteria for being classified as dangerous for the environment.

Exposure assessment (environment):	:	Not applicable.
Exposure estimation	:	Not available.

Exposure estimation and reference to its source - Workers:1: All process categories are addressed by this contributing scenario as all Operational Conditions and Risk Management Measures are identical.

Exposure assessment (human):	:	Qualitative approach used to conclude safe use.
Exposure estimation	:	Not available.

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

Environment	:	Not applicable.
Health	:	No additional risk management measures required.

Additional good practice advice beyond the REACH CSA

Environment	:	Not available.
Health	:	Use containment as appropriate. Ensure control measures are regularly inspected and maintained. Pay attention to good general hygiene and housekeeping.