Safety Data Sheet
According to REACH Regulation 1907/2006/EC and Regulation (EU) 453/2010

Date of issue: 21-03-2013	Revision: 01-06-2015 24-07-2015

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Trade name: Commercial potassium nitrate
Chemical name: Potassium nitrate
Synonyms: Potassium saltpeter, Potassium salt of nitric acid
CAS number: 7757-79-1
EC number: 231-818-8
Registration number under REACH Regulation: 01-2119488224-35-0008

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

Identified uses:
Chemical, glass, radio, electrical, machine engineering. Fertilizers.

Uses advised against: no

1.3. Details of the supplier of the safety data sheet

Manufacturer:
URALCHEM, JSC
6/2 Presnenskaya Naberezhnaya, Moscow, Russia, 123317
AZOT Branch of URALCHEM, JSC in Berezniki
75, Churtanskoe shosse, Berezniki, Perm krai
618401 Russia
Tel.: +7 (3424) 29-82-09
Fax: +7 (3424) 26-48-72
azot@uralchem.com

Only Representative:
Uralchem Assist GmbH
30159, Germany, Hannover, Johannssenstr. 10
V. Yasnova
Tel.: +49-511-45-99-445 9.00 – 15.00 CET
info@uralchem-assist.com

1.4. Emergency telephone number

+7 (3424) 26-22-22 Russia (8.00-17.00 GMT+5)

UK National Poisons Emergency number: 0870 600 6266

2. HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

Classification according to REGULATION (EC) No 1272/2008 on classification, labeling and packaging:

Oxidising solid, Category 3, H272

2.2. Label Elements

WARNING

H272: May intensify fire; oxidiser.

P210: Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P220: Keep/Store away from clothing/combustible materials.
P280: Wear protective gloves/protective clothing/eye protection/face protection.
P370+P378: In case of fire: Use sprayed water for extinction.

2.3. Other hazards

PBT/vPvB: not relevant (inorganic)

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical name: Potassium nitrate
CAS number: 7757-79-1
EC number: 231-818-8
Index number under CLP Regulation: Not available

Index number R. 1272/2008	EC number	CAS number	Name	Concentration	Classification Regulation (EC) 1272/2008	Specific concentration limits and M-factor	REACH Registration number
--	231-818-8	7757-79-1	Potassium nitrate	80-100% w/w	Ox. Sol. 3, H272	--	01-2119488224-35-0008

4. FIRST AID MEASURES

4.1. Description of first aid measures

4.1.1. General information:
In case of accident or if you feel unwell, seek medical advice immediately (show safety data sheet if possible).

4.1.2. Following inhalation:
Remove casualty to fresh air and keep warm and at rest.
Get medical advice/attention if you feel unwell.

4.1.3. After skin contact:
After contact with skin, wash immediately with: Water
Get medical advice/attention if you feel unwell

4.1.4. Following eye contact:
In case of contact with eyes, rinse immediately with plenty of flowing water for 10 to 30 minutes holding eyelids apart. Subsequently consult an ophthalmologist.

4.1.5. After ingestion:
Rinse mouth thoroughly with water.
Give activated carbon.
Get medical advice/attention if you feel unwell

4.1.6. Self-protection of the first aider.
First aid assistant: Pay attention to self-protection!

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

Ingestion: Cough, respiration disturbance, throat ache.
Skin contact: Provokes irritation, at long-term contacts causes pachymenia of palms and feet
Eye contact: Provokes irritation.
Body penetration: Nausea, vomiting, stomach aches.

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

Treat symptomatically.
Get medical advice/attention if you feel unwell

5. FIRE-FIGHTING MEASURES

5.1. Extinguishing media

Suitable extinguishing media:
Water spray.
Mechanical air foam.

Extinguishing media which must not be used for safety reasons: no data available

5.2. Special hazards arising from the substance or mixture

Oxidizer

5.3. Advice for fire-fighters

Fight fire with normal precautions from a reasonable distance.
Wear a self-contained breathing apparatus and chemical resistant suit.
Rubber boots (heat resistant).
Gloves: Butyl rubber (oil and gasoline resistant).
Helmet.

5.4. Additional information

No data available.

6. ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Remove persons to safety.
Wear personal protection equipment.
Remove all sources of ignition.
Provide adequate ventilation.

Keep away from food, drink and animal feedingstuffs.
Wash hands thoroughly after handling.

6.2. Environmental precautions

Ensure waste is collected and contained.
Do not empty into drains or the aquatic environment.
Retain contaminated washing water and dispose.

6.3. Methods and material for containment and cleaning up

Wash with generous amount of water.
Remove mechanically, placing in appropriate containers for disposal.
Ventilate affected area.
Clear up spills and dispose of waste in accordance with regulatory requirements.

6.4. Reference to other sections

See protective measures under point 8 and 13.

7. HANDLING AND STORAGE

7.1. Precautions for safe handling

Information for safe handling:
Only use material in places where open light, fire and other sources of ignition can be kept away.
Wear personal protection equipment.
Technical ventilation of workplace.
Establish monitoring systems for monitoring particulates (dust).
Wash hands thoroughly after handling.

7.2. Conditions for safe storage, including any incompatibilities

Store in a cool dry place.
Keep storage area clean.
Keep away from heat sources (e.g. hot surfaces), sparks and open flames.
Do not store together with:
Combustible substance
Acid
Alkali

Packaging materials (bags): PP (welded)
Guaranteed shelf life period:
Potassium nitrate grade A - 1 year.
Potassium nitrate grade B,C - unlimited.

7.3. Specific end use(s)

See Annex I.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

DNEL/DMEL: Workers			
Acute - systemic effects	Dermal (mg/kg bw/day)	--	--
	Inhalation (mg/m^3)	--	--
Acute - local effects	Dermal (mg/cm^2)	--	--
	Inhalation (mg/m^3)	--	--
Long-term - systemic effects	Dermal (mg/kg bw/day)	20.8	Repeated dose toxicity
	Inhalation (mg/m^3)	36.7	Repeated dose toxicity
Long-term – local effects	Dermal (mg/cm^2)	--	--
	Inhalation (mg/m^3)	--	--

DNEL/DMEL: General population			
Acute - systemic effects	Dermal (mg/kg bw /day)	--	--
	Inhalation (mg/m^3)	--	--
	Oral (mg/kg bw /day)	--	--
Acute - local effects	Dermal (mg/cm^2)	--	--
	Inhalation (mg/m^3)	--	--
Long-term - systemic effects	dermal(mg/kg bw /day)	12.5	Repeated dose toxicity
	Inhalation (mg/m^3)	10.9	Repeated dose toxicity
	Oral (mg/kg bw /day)	12.5	Repeated dose toxicity
Long-term – local effects	Dermal (mg/cm^2)	--	--
	Inhalation (mg/m^3)	--	--

PNEC		
PNEC aqua – freshwater (mg/l)	0.45	Extrapolation method: assessment factor
PNEC aqua - marine water (mg/l)	0.045	Extrapolation method: assessment factor
PNEC aqua – intermittent releases (mg/l)	4.5	Extrapolation method: assessment factor
PNEC sediment	--	--
PNEC sediment-marine	--	--
PNEC soil	--	--
PNEC stp (mg/l.)	18	Extrapolation method: assessment factor

8.2. Exposure controls

8.2.1. Appropriate engineering controls

Provide a good standard of general ventilation. Provide extract ventilation to points where emissions occur.
Ensure the ventilation system is regularly maintained and tested
Establish monitoring systems for monitoring particulates (dust)
Automate activity where possible: transportation, packaging

8.2.2. Individual protection measures, such as personal protective equipment

Personal protection equipment
Respiratory protection:
Gas filtering equipment (EN 141).
Hand protection:
Wear suitable gloves.
Eye protection:
Goggles.
Skin protection:
Boots (rubber or leather).
Wear suitable protective clothing (Suitable material: cotton)
General protection and hygiene measures:
Wash hands and face before breaks and after work and take a shower if necessary.
Avoid contact with skin, eye and clothing.

8.2.3. Environmental exposure controls

Establish monitoring systems for monitoring particulates concentration (dust)

9. PHYSICAL AND CHEMICAL PROPERTIES	
9.1. Information on basic physical and chemical properties	
Appearance (physical state and colour):	Solid, colourless or white crystals, crystalline powder or granules.
Odour:	Odourless
Odour threshold:	Not applicable
pH:	ca. 7
Melting point/freezing point:	335 °C (1013 hPa)
Initial boiling point and boiling range:	Not applicable (solid, melting point > 300 ºC)
Flash point:	Not applicable (inorganic)
Flammability (solid, gas):	Non-flammable (UN S.1)
Upper/lower flammability or explosive limits:	Not applicable
Explosive properties:	Non explosive (based on the structure and EC tube test)
Oxidising properties:	Oxidising (UN O.1) Oxidising solid Category 3
Vapour pressure:	The study does not need to be conducted: solid, melting point > 300 °C
Relative density	2.1 (20°C)
Solubility:	No data available

Water solubility:	>100 g/L (25 °C)
Partition coefficient: n-octanol/water:	Not applicable (inorganic)
Viscosity:	Not applicable (solid)
Vapour density:	Not applicable
Evaporation rate:	Not applicable
Auto-ignition temperature:	Not self-heating (based on structure and melting point > 300 ºC)
Decomposition temperature:	> 400ºC

9.2. Other information

Organic peroxide: Based on the available data, the classification criteria are not met.
Self-heating: Based on the available data, the classification criteria are not met.
Pyrophoric liquid/solid: Based on the available data, the classification criteria are not met.
Corrosive to metals: No data available.
Substance which in contact with water emits flammable gases: Based on the available data, the classification criteria are not met.

10. STABILITY AND REACTIVITY

10.1. Reactivity

See section 10.5

10.2. Chemical stability

Stable.

10.3. Possibility of hazardous reactions

Organic acids.

Alkalis (alkalis).

10.4. Conditions to avoid

Keep away from sources of ignition - No smoking.

10.5. Incompatible materials

Alkalis (alkalis).
Acids

10.6. Hazardous decomposition products

Potassium nitrite, potassium oxide, oxygen

11. TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects:

11.2. acute effects (acute toxicity, irritation and corrosivity):

11.2.1. LD50 oral	> 2000 mg/kg bw (rat; male/female) OECD 425
11.2.2. LD50 dermal	>5000 mg/kg bw (rat; male/female) OECD 402
11.2.3. LC50 inhalation	> 0.527 mg/L (4 h) (dust) (rat; male/female) (maximum achievable concentration) OECD 403
11.2.4. Skin corrosion /irritation	Not irritating (rabbit) OECD 404
11.2.5. Serious eye damage/irritation	*In vitro*: not irritating OECD 437 *In vivo*: not irritating (rabbit) OECD 405; EU B.5

11.2.6 Specific target organ toxicity – single exposure	Based on the available data, the classification criteria are not met.

11.3. Sensitisation,:

Respiratory sensitisation: No data available
Skin sensitisation: Not sensitising (mouse; female)
OECD 429; EU B.42; EPA OPPTS 870.2600

11.4. Repeated dose toxicity:

Specific target organ toxicity – repeated exposure: Based on the available data, the classification criteria are not met.
Oral (28 days):
NOAEL ≥ 1500 mg/kg bw/day (rat; male/female)
OECD 422

11.5 CMR effects (carcinogenity, mutagenicity and toxicity for reproduction):

Carcinogenicity: The carcinogenicity study is not required since the substance is not genotoxic.

Germ cell mutagenicity: Based on the available data, the classification criteria are not met.

Reproductive toxicity: Based on the available data, the classification criteria are not met.
Fertility:
Oral:
NOAEL (P) ≥ 1500 mg/kg bw/day (rat; male/female)
OECD 422

Developmental toxicity:
Oral:
NOAEL ≥ 1500 mg/kg bw/day (rat; male/female)
OECD 422

Reproductive toxicity, effects on or via lactation: No data available.

11.6. Aspiration hazard:

No data available

12. ECOLOGICAL INFORMATION	
12.1. Toxicity	
Acute toxicity to fish	
LC50	Species: *Poecilia reticulata* 1378 mg/L (96 h) (freshwater; static) OECD 203 Rubin, A. J. and Elmaraghy, G. A. (1977).
Chronic toxicity to fish	
NOEC	No data available
Acute toxicity to crustaceans	
EC50	Species: *Daphnia magna* 490 mg/L (48 h) (freshwater) Dowden, B. F. and Bennett H. J. (1965).
Chronic toxicity to crustaceans	
NOEC	No data available
Acute toxicity to algae and other aquatic plants	
EC50	Species: several benthic diatoms > 1700 mg/L (10 d) (saltwater) (growth rate) Admiraal W. (1977)
Toxicity data on soil micro- and macro-organisms and other environmentally relevant organisms, such as birds, bees and plants	
No data available	

12.2. Persistence and degradability	
Readily biodegradable	Not applicable (inorganic)
Other relevant information	In aqueous solution, the substance is dissociated into potassium and nitrate ions. Under anoxic conditions, denitrification occurs and nitrate is ultimately converted into molecular nitrogen as part of the Nitrogen cycle.
12.3. Bioaccumulative potential	
Experimental BCF	Not applicable (low bioaccumulation potential)
Log Pow	Not applicable (inorganic)
12.4. Mobility in soil	
Low adsorption potential.	
12.5. Results of PBT and vPvB assessment	
PBT/vPvB: Not relevant (inorganic).	
12.6. Other adverse effects	
No data available	
13. DISPOSAL CONSIDERATIONS	
13.1. Waste treatment methods	
Waste disposal according to official state regulations.	

14. TRANSPORT INFORMATION	
14.1 IMDG (sea)	
14.1.1 UN number:	1486
14.1.2 class:	5.1, O2
14.1.3 proper shipping name:	POTASSIUM NITRATE
14.1.4 packing group:	III
14.1.5. Environmental hazards:	Not marine pollutant.
14.2 ADR (road)/RID (rail)	
14.2.1 UN number:	1486
14.2.2 class:	5.1, O2
14.2.3 proper shipping name:	POTASSIUM NITRATE
14.2.4 packing group:	III
14.2.5. Environmental hazards:	No
14.3 ICAO/IATA (air)	
14.3.1 UN number:	1486
14.3.2 class:	5.1, O2
14.3.3 proper shipping name:	POTASSIUM NITRATE
14.3.4 packing group:	III

14.3.5. Environmental hazards:	No

14.6. Special precautions for user

RID/ADR: 5.1/22c
RID/ADR: 5.1/III
IATA/ICAO 5.1/III
IMDG-Code: 5.1/III
PAX 516 CAO 518
HS № 2834 21 000
For substance – potassium nitrate
Labelling
«O» - oxidizing

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

Not relevant

15. REGULATORY INFORMATION

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

Not relevant

15.2. Chemical safety assessment

For this substance a chemical safety assessment has been carried out.

16. OTHER INFORMATION

Abbreviations:
DNEL: Derived No-Effect Level
PNEC: Predicted No-Effect Concentration
NOAEL: No Observed Adverse Effect Level
NOEC: No observed effect concentration.
LD50: Lethal Dose 50%. The LD50 corresponds to the dose of a tested substance causing 50% lethality during a specified time interval.
LC50: Lethal Concentration 50%. The LC50 corresponds to the concentration of a tested substance causing 50% lethality during a specified time interval.

EC50: Effective Concentration 50%. The EC50 corresponds to the concentration of a tested substance causing 50% changes in response (e.g. on growth) during a specified time interval.
BCF: Bioconcentration factor
PBT: Persistent, bioaccumulative and toxic
vPvB: Very Persistent and very Bioccumulative

Indication of changes:
Section 2.1.: Classification per Directive 67/548/EEC deleted as no longer applicable, effective 1 June 2015.
Section 3.: Classification per Directive 67/548/EEC deleted as no longer applicable, effective 1 June 2015.
Section 1.3.: Change of Manufacturer's name.

Identified uses

Table 1. Usesbyworkers in industrialsettings

Confidential	IU number	Identified Use (IU) name	Substance supplied to that use	Use descriptors
	1	Manufacturing of the substance including storage, handling and q control		**Process category (PROC):** PROC 1: Use in closed process, no likelihood of exposure PROC 2: Use in closed, continuous process with occasional controlled exposure PROC 3: Use in closed batch process (synthesis or formulation) PROC 4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC 8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities PROC 8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC 9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC 15: Use as laboratory reagent **Environmental release category (ERC):** ERC 1: Manufacture of substances **Sector of end use (SU):** SU 8: Manufacture of bulk, large scale chemicals (including petroleum products) **Subsequent service life relevant for that use?:** no
	2	Sampling, loading, filling, transfer, dumping, bagging of substance (charging/discharching) at non-dedicated facilities.	as such (substance itself)	**Process category (PROC):** PROC 8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities **Market sector by type of chemical product:** PC 4: Anti-freeze and de-icing products PC 11: Explosives PC 12: Fertilizers' PC 14: Metal surface treatment products, including galvanic and electroplating products PC 16: Heat transfer fluids PC 19: Intermediate

Confidential	IU number	Identified Use (IU) name	Substance supplied to that use	Use descriptors
		Industrial setting		PC 20: Products such as ph-regulators, flocculants, precipitants, neutralisation agents PC 35: Washing and cleaning products (including solvent based products) PC 37: Water treatment chemicals PC 0: Other: S50200 PC 17: Hydraulic fluids PC 39: Cosmetics, personal care products **Environmental release category (ERC):** ERC 2: Formulation of preparations ERC 4: Industrial use of processing aids in processes and products, not becoming part of articles ERC 6a: Industrial use resulting in manufacture of another substance (use of intermediates) ERC 7: Industrial use of substances in closed systems **Subsequent service life relevant for that use?:** no
	3	Sampling, loading, filling, transfer, dumping, bagging of substance (charging/discharching) at dedicated facilities. Industrial setting.	as such (substance itself)	**Process category (PROC):** PROC 8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities **Market sector by type of chemical product:** PC 4: Anti-freeze and de-icing products PC 11: Explosives PC 12: Fertilisers PC 14: Metal surface treatment products, including galvanic and electroplating products PC 16: Heat transfer fluids PC 19: Intermediate PC 20: Products such as ph-regulators, flocculants, precipitants, neutralisation agents PC 35: Washing and cleaning products (including solvent based products) PC 37: Water treatment chemicals PC 0: Other: S50200 PC 17: Hydraulic fluids PC 39: Cosmetics, personal care products **Environmental release category (ERC):** ERC 2: Formulation of preparations ERC 4: Industrial use of processing aids in processes and products, not becoming part of articles ERC 6a: Industrial use resulting in manufacture of another substance (use of intermediates) ERC 7: Industrial use of substances in closed systems **Subsequent service life relevant for that use?:** no

Confidential	IU number	Identified Use (IU) name	Substance supplied to that use	Use descriptors
	4	Transfer of substance into small containers (dedicated filling line, including weighing). Industrial setting.	as such (substance itself)	**Process category (PROC):** PROC 9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) **Market sector by type of chemical product:** PC 4: Anti-freeze and de-icing products PC 11: Explosives PC 12: Fertilisers PC 19: Intermediate PC 35: Washing and cleaning products (including solvent based products) PC 37: Water treatment chemicals PC 0: Other: S50200 PC 17: Hydraulic fluids PC 39: Cosmetics, personal care products **Environmental release category (ERC):** ERC 2: Formulation of preparations ERC 6a: Industrial use resulting in manufacture of another substance (use of intermediates) **Subsequent service life relevant for that use?:** no
	5	Q control	as such (substance itself)	**Process category (PROC):** PROC 15: Use as laboratory reagent **Market sector by type of chemical product:** PC 4: Anti-freeze and de-icing products PC 11: Explosives PC 12: Fertilisers PC 19: Intermediate PC 35: Washing and cleaning products (including solvent based products) PC 37: Water treatment chemicals PC 0: Other: S50200 PC 17: Hydraulic fluids PC 39: Cosmetics, personal care products **Environmental release category (ERC):** ERC 2: Formulation of preparations ERC 6a: Industrial use resulting in manufacture of another substance (use of intermediates) **Subsequent service life relevant for that use?:** no

Confidential	IU number	Identified Use (IU) name	Substance supplied to that use	Use descriptors
	6	Use of potassium nitrate for formulation of preparations for fertilizers, pyrotechnic, fireworks, antifreeze, explosives, washing/cleaning products and water treatment chemicals	as such (substance itself)	**Process category (PROC):** PROC 1: Use in closed process, no likelihood of exposure PROC 2: Use in closed, continuous process with occasional controlled exposure PROC 3: Use in closed batch process (synthesis or formulation) PROC 4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC 5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact) PROC 14: Production of preparations or articles by tabletting, compression, extrusion, pelletisation PROC 19: Hand-mixing with intimate contact and only PPE available. PROC 26: Handling of solid inorganic substances at ambient temperature **Market sector by type of chemical product:** PC 4: Anti-freeze and de-icing products PC 11: Explosives PC 12: Fertilisers PC 35: Washing and cleaning products (including solvent based products) PC 37: Water treatment chemicals PC 0: Other: S50200 PC 17: Hydraulic fluids PC 39: Cosmetics, personal care products **Environmental release category (ERC):** ERC 2: Formulation of preparations **Subsequent service life relevant for that use?:** no
	7	Industrial use as intermediate to synthesize other substances	as such (substance itself)	**Process category (PROC):** PROC 1: Use in closed process, no likelihood of exposure PROC 2: Use in closed, continuous process with occasional controlled exposure PROC 3: Use in closed batch process (synthesis or formulation) PROC 4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC 19: Hand-mixing with intimate contact and only PPE available. PROC 22: Potentially closed processing operations with minerals/metals at elevated temperature. Industrial setting PROC 23: Open processing and transfer operations with minerals/metals at elevated temperature PROC 26: Handling of solid inorganic substances at ambient temperature **Market sector by type of chemical product:** PC 19: Intermediate **Environmental release category (ERC):**

Confidential	IU number	Identified Use (IU) name	Substance supplied to that use	Use descriptors
				ERC 6a: Industrial use resulting in manufacture of another substance (use of intermediates) **Subsequent service life relevant for that use?:** no
	8	Industrial use of the substance in solar power plants	as such (substance itself)	**Process category (PROC):** PROC 1: Use in closed process, no likelihood of exposure PROC 2: Use in closed, continuous process with occasional controlled exposure PROC 5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact) PROC 20: Heat and pressure transfer fluids in dispersive, professional use but closed systems PROC 22: Potentially closed processing operations with minerals/metals at elevated temperature. Industrial setting PROC 23: Open processing and transfer operations with minerals/metals at elevated temperature **Market sector by type of chemical product:** PC 16: Heat transfer fluids **Environmental release category (ERC):** ERC 7: Industrial use of substances in closed systems **Subsequent service life relevant for that use?:** no
	9	Industrial end use as processing aid	as such (substance itself)	**Process category (PROC):** PROC 1: Use in closed process, no likelihood of exposure PROC 2: Use in closed, continuous process with occasional controlled exposure PROC 5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact) PROC 7: Industrial spraying PROC 10: Roller application or brushing PROC 13: Treatment of articles by dipping and pouring PROC 20: Heat and pressure transfer fluids in dispersive, professional use but closed systems PROC 22: Potentially closed processing operations with minerals/metals at elevated temperature. Industrial setting PROC 23: Open processing and transfer operations with minerals/metals at elevated temperature **Market sector by type of chemical product:** PC 14: Metal surface treatment products, including galvanic and electroplating products PC 20: Products such as ph-regulators, flocculants, precipitants, neutralisation agents **Environmental release category (ERC):** ERC 4: Industrial use of processing aids in processes and products, not becoming part of articles **Subsequent service life relevant for that use?:** no

Table 2. Usesby professional workers

Confidential	IU number	Identified Use (IU) name	Substance supplied to that use	Use descriptors
	10	Sampling, loading, filling, transfer, dumping, bagging of substance (charging/discharching) at non-dedicated facilities. Professional setting.	as such (substance itself) in a mixture	**Process category (PROC):** PROC 8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities **Market sector by type of chemical product:** PC 4: Anti-freeze and de-icing products PC 12: Fertilisers PC 16: Heat transfer fluids PC 17: Hydraulic fluids PC 37: Water treatment chemicals PC 11: Explosives PC 0: Other: S50200 **Environmental release category (ERC):** ERC 8a: Wide dispersive indoor use of processing aids in open systems ERC 8b: Wide dispersive indoor use of reactive substances in open systems ERC 8c: Wide dispersive indoor use resulting in inclusion into or onto a matrix ERC 8d: Wide dispersive outdoor use of processing aids in open systems ERC 8e: Wide dispersive outdoor use of reactive substances in open systems ERC 8f: Wide dispersive outdoor use resulting in inclusion into or onto a matrix ERC 9a: Wide dispersive indoor use of substances in closed systems ERC 9b: Wide dispersive outdoor use of substances in closed systems **Subsequent service life relevant for that use?:** no
	11	Sampling, loading, filling, transfer, dumping, bagging of substance (charging/discharching) at dedicated facilities. Professional	as such (substance itself) in a mixture	**Process category (PROC):** PROC 8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities **Market sector by type of chemical product:** PC 4: Anti-freeze and de-icing products PC 11: Explosives PC 12: Fertilisers PC 16: Heat transfer fluids PC 17: Hydraulic fluids PC 37: Water treatment chemicals PC 0: Other: S50200

Confidential	IU number	Identified Use (IU) name	Substance supplied to that use	Use descriptors
		setting.		**Environmental release category (ERC):** ERC 8b: Wide dispersive indoor use of reactive substances in open systems ERC 8a: Wide dispersive indoor use of processing aids in open systems ERC 8c: Wide dispersive indoor use resulting in inclusion into or onto a matrix ERC 8d: Wide dispersive outdoor use of processing aids in open systems ERC 8e: Wide dispersive outdoor use of reactive substances in open systems ERC 8f: Wide dispersive outdoor use resulting in inclusion into or onto a matrix ERC 9a: Wide dispersive indoor use of substances in closed systems ERC 9b: Wide dispersive outdoor use of substances in closed systems **Subsequent service life relevant for that use?:** no
	12	Transfer of substance into small containers (dedicated filling line, including weighing). Professional setting.	as such (substance itself) in a mixture	**Process category (PROC):** PROC 9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) **Market sector by type of chemical product:** PC 4: Anti-freeze and de-icing products PC 11: Explosives PC 12: Fertilisers PC 16: Heat transfer fluids PC 17: Hydraulic fluids PC 37: Water treatment chemicals PC 0: Other: S50200 **Environmental release category (ERC):** ERC 8a: Wide dispersive indoor use of processing aids in open systems ERC 8b: Wide dispersive indoor use of reactive substances in open systems ERC 8c: Wide dispersive indoor use resulting in inclusion into or onto a matrix ERC 8d: Wide dispersive outdoor use of processing aids in open systems ERC 8e: Wide dispersive outdoor use of reactive substances in open systems ERC 8f: Wide dispersive outdoor use resulting in inclusion into or onto a matrix ERC 9a: Wide dispersive indoor use of substances in closed systems ERC 9b: Wide dispersive outdoor use of substances in closed systems **Subsequent service life relevant for that use?:** no
	13	Professional end-use (fertilizer)	as such (substance itself)	**Process category (PROC):** PROC 2: Use in closed, continuous process with occasional controlled exposure PROC 5: Mixing or blending in batch processes for formulation of preparations and articles

Confidential	IU number	Identified Use (IU) name	Substance supplied to that use	Use descriptors
			in a mixture	(multistage and/or significant contact) PROC 11: Non industrial spraying PROC 13: Treatment of articles by dipping and pouring PROC 19: Hand-mixing with intimate contact and only PPE available. PROC 26: Handling of solid inorganic substances at ambient temperature **Market sector by type of chemical product:** PC 12: Fertilisers **Environmental release category (ERC):** ERC 8b: Wide dispersive indoor use of reactive substances in open systems ERC 8e: Wide dispersive outdoor use of reactive substances in open systems **Subsequent service life relevant for that use?:** no
	14	Professional end-use in water treatment chemicals, explosives and pyrotechnics	as such (substance itself) in a mixture	**Process category (PROC):** PROC 5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact) PROC 16: Using material as fuel sources, limited exposure to unburned product to be expected PROC 19: Hand-mixing with intimate contact and only PPE available. PROC 26: Handling of solid inorganic substances at ambient temperature **Market sector by type of chemical product:** PC 11: Explosives PC 37: Water treatment chemicals PC 0: Other: S50200 **Environmental release category (ERC):** ERC 8e: Wide dispersive outdoor use of reactive substances in open systems **Subsequent service life relevant for that use?:** no
	15	Professional end-use as processing aid, outdoor and indoor	as such (substance itself) in a mixture	**Process category (PROC):** PROC 5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact) PROC 10: Roller application or brushing PROC 11: Non industrial spraying PROC 13: Treatment of articles by dipping and pouring PROC 19: Hand-mixing with intimate contact and only PPE available. **Market sector by type of chemical product:** PC 4: Anti-freeze and de-icing products PC 16: Heat transfer fluids

Confidential	IU number	Identified Use (IU) name	Substance supplied to that use	Use descriptors
				PC 17: Hydraulic fluids PC 37: Water treatment chemicals **Environmental release category (ERC):** ERC 8a: Wide dispersive indoor use of processing aids in open systems ERC 8d: Wide dispersive outdoor use of processing aids in open systems ERC 9a: Wide dispersive indoor use of substances in closed systems ERC 9b: Wide dispersive outdoor use of substances in closed systems **Subsequent service life relevant for that use?:** no

Table 3. Uses by consumers

Confidential	IU number	Identified Use (IU) name	Use descriptors
	16	Consumer use of potassium nitrate in anti-freeze and de-icing products	**Chemical product category (PC):** PC 4: Anti-freeze and de-icing products **Environmental release category (ERC):** ERC 8a: Wide dispersive indoor use of processing aids in open systems ERC 8d: Wide dispersive outdoor use of processing aids in open systems ERC 9a: Wide dispersive indoor use of substances in closed systems ERC 9b: Wide dispersive outdoor use of substances in closed systems **Subsequent service life relevant for that use?:** no
	17	Consumer use of potassium nitrate in fertilizers	**Chemical product category (PC):** PC 12: Fertilisers **Environmental release category (ERC):** ERC 8b: Wide dispersive indoor use of reactive substances in open systems ERC 8e: Wide dispersive outdoor use of reactive substances in open systems **Subsequent service life relevant for that use?:** no
	18	Consumer use of potassium nitrate in cleaning agents	**Chemical product category (PC):** PC 35: Washing and cleaning products (including solvent based products) **Environmental release category (ERC):** ERC 8a: Wide dispersive indoor use of processing aids in open systems ERC 8d: Wide dispersive outdoor use of processing aids in open systems **Subsequent service life relevant for that use?:** no
	19	Consumer use of cosmetic products containing potassium nitrate	**Chemical product category (PC):** PC 39: Cosmetics, personal care products **Environmental release category (ERC):** ERC 8a: Wide dispersive indoor use of processing aids in open systems ERC 8d: Wide dispersive outdoor use of processing aids in open systems **Subsequent service life relevant for that use?:** no
	20	Consumer use of fireworks containing potassium nitrate	**Chemical product category (PC):** PC 0: Other: S50200 **Environmental release category (ERC):** ERC 8e: Wide dispersive outdoor use of reactive substances in open systems **Subsequent service life relevant for that use?:** no

1 Exposure scenario (1) ***Manufacturing of the substance***	
Use descriptors related to the life cycle stage	*SU3/8* *PROC1/2/3/4/8a/8b/9/15* *ERC1*
Name of contributing environmental scenario (1) and corresponding ERC	*1. Manufacturing of substances (ERC1)*
List of names of contributing worker scenarios (2) and corresponding PROC	*1. Use in closed process, no likelihood of exposure (PROC1)* *2. Manufacturing in a closed continuous process, with occasional exposure (PROC2)* *3. Use in closed batch process (synthesis or formulation) (PROC3)* *4. Use in batch and other process (synthesis) where opportunity for exposure arises (PROC4)* *5. Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities (PROC8a)* *6. Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities (PROC8b)* *7. Transfer of substance or preparation into small containers (dedicated filling line, including weighing) (PROC9)* *8. Use as laboratory reagent (PROC15)*
2.1 Contributing scenario (1) controlling environmental exposure	
Environmental release during manufacturing *ERC1* *An environmental assessment has not been performed as the substance does not meet the criteria for being classified as dangerous for the environment.*	
2.2 Contributing scenario (2) controlling worker exposure for manufacturing of the substance.	
All Process Categories are covered by this contributing scenario as all Operational Conditions (OCs) and Risk Management Measures (RMMs) are identical. *PROC1/2/3/4/8a/8b/9/15* *A human health assessment has not been performed as the substance does not meet the criteria for being classified as dangerous for human. However, as the substance is oxidising a qualittative risk characterisation has been performed.*	
Product characteristic	
Product related conditions, e.g. the concentration of the substance in a mixture, the physical state of that mixture (solid, liquid; if solid: level of dustiness), package design affecting exposure	*Solid, low dustiness*
Amounts used	
Amounts used at a workplace (per task or per shift); note: sometimes this information is not needed for assessment of worker's exposure	*Not applicable*
Frequency and duration of use/exposure	
Duration per task/activity (e.g. hours per shift) and frequency (e.g. single events or repeated) of exposure	*More than 4 hours per day*
Human factors not influenced by risk management	
Particular conditions of use, e.g. body parts potentially exposed as a result of the nature of the activity	*Not applicable*

Other given operational conditions affecting workers exposure	
Other given operational conditions: e.g. technology or process techniques determining the initial release of substance from process into workers environment; room volume, whether the work is carried out outdoors/indoors, process conditions related to temperature and pressure.	*Indoors*
Technical conditions and measures at process level (source) to prevent release	
Process design aiming to prevent releases and hence exposure of workers; this in particular includes conditions ensuring rigorous containment; performance of containment to be specified (e.g. by quantification of residual losses or exposure)	*Not applicable*
Technical conditions and measures to control dispersion from source towards the worker	
Engineering controls, e.g. exhaust ventilation, general ventilation; specify effectiveness of measure	*1. Containment as appropriate* *2. Good standard of general ventilation*
Organisational measures to prevent /limit releases, dispersion and exposure	
Specific organisational measures or measures needed to support the functioning of particular technical measures (e.g. training and supervision). Those measures need to be reported in particular for demonstrating strictly controlled conditions (to justify exposure based waiving).	*Not applicable*
Conditions and measures related to personal protection, hygiene and health evaluation	
Personal protection, e.g. wearing of gloves, face protection, full body dermal protection, goggles, respirator; specify effectiveness of measure; specify the suitable material for the PPE (where relevant) and advise how long the protective equipment can be used before replacement (if relevant)	*Not applicable*
Conditions and measures related to hazards from physico-chemical properties (Oxidising)	
	General good practice for handling and storage of hazardous chemical substances. *Do no eat, drink or smoke when using this product.* *Keep away from flammable, combustible and reducing substances*
3 Exposure information and relevance to its source	
Information for contributing scenario 1	
An environmental assessment has not been performed as the substance does not meet the criteria for being classified as dangerous for the environment.	
Information for contributing scenario 2	
A qualitative approach was used to conclude safe use for workers due to the physico-chemical hazard: oxidizing. *A human health assessment has not been performed as the substance does not meet the criteria for being classified as dangerous for the human.*	
4 Guidance to DU to evaluate whether he works inside the boundaries set by the ES	
No additional risk management measures, besides those that are mentioned above, are needed to guarantee safe use for workers. *For hazards derived from physico-chemical properties, downstream users can objectively evaluate their own likelihood and possible consequences of an incident by following methodology set in Appendix E-1 from Guidance on Information Requirements and Chemical Safety Assessment Part E:*	

Risk Characterisation (http://guidance.echa.europa.eu/).

5 Additional good practice advice beyond the REACH CSA

Additional good practices (Operational Conditions and Risk Management Measures) beyond the REACH Chemical Safety Assessment established within Chemical Industry are also advised and communicated through Safety Data Sheets. Such as:

- *Containment as appropriate;*
- *Minimise number of staff exposed;*
- *Segregation of the emitting process;*
- *Effective contaminant extraction;*
- *Good standard of general ventilation;*
- *Minimisation of manual phases;*
- *Avoidance of contact with contaminated tools and objects;*
- *Regular cleaning of equipment and work area;*
- *Management/supervision in place to check that RMMs in place are being used correctly and OCs followed;*
- *Training staff on good practice;*
- *Good standard of personal hygiene;*

1 Exposure scenario (2)

Industrial use for formulation of preparations, intermediate use and end-use in industrial settings.

Use descriptors related to the life cycle stage	SU3/10 PC0:Other : S50200 /4/11/12/14/16/17/19/20/35/37/39 PROC1/2/3/4/5/7/8a/8b/9/10/13/14/15/19/20/22/23/26 ERC2/4/6a/7
Name of contributing environmental scenario (1) and corresponding ERC	1. Formulation of preparations (ERC2) 2. Industrial use of processing aids in processes and products, not becoming part of articles (ERC4) 3. Industrial use resulting in manufacture of another substance (use of intermediates) (ERC6a) 4. Industrial use of substances in closed systems (ERC7)
List of names of contributing worker scenarios (2) and corresponding PROC	1. Use in closed process, no likelihood of exposure (PROC1) 2. Use in closed, continuous process with occasional controlled exposure (PROC2) 3. Use in closed batch process (synthesis or formulation) (PROC3) 4. Use in batch and other process (synthesis) where opportunity for exposure arises (PROC4) 5. Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact) (PROC5) 6. Industrial spraying (PROC7) 7. Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities (PROC8a) 8. Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities (PROC8b) 9. Transfer of substance or preparation into small containers (dedicated filling line, including weighing) (PROC9) 10. Roller application or brushing (PROC10) 11. Treatment of articles by dipping and pouring (PROC13) 12. Production of preparations* or articles by tabletting, compression, extrusion, pelletisation (PROC14) 13. Use as laboratory reagent (PROC15) 14. Hand-mixing with intimate contact and only PPE available (PROC19) 15. Heat and pressure transfer fluids in dispersive, professional use but closed systems (PROC20) 16. Potentially closed processing operations with minerals/metals at elevated temperature (PROC22) 17. Open processing and transfer operations with minerals/metals at

	elevated temperature (PROC23) 18. Handling of solid inorganic substances at ambient temperature (PROC26)

2.1 Contributing scenario (1) controlling environmental exposure

Formulation of preparations (ERC2) and industrial use of processing aids in processes and products, not becoming part of articles (ERC4). Industrial use resulting in manufacture of another substance (use of intermediates, ERC6a) and industrial use of substances in closed systems (ERC7).

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

2.2 Contributing scenario (2) controlling worker exposure for industrial use for formulation of preparations, intermediate use and end-use in industrial settings.

All Process Categories are covered by this contributing scenario as all Operational Conditions (OCs) and Risk Management Measures (RMMs) are identical.

PROC1/2/3/4/5/7/8a/8b/9/10/13/14/15/19/20/22/23/26

A human health assessment has not been performed as the substance does not meet the criteria for being classified as dangerous for human. However, as the substance is oxidising a qualittative risk characterisation has been performed.

Product characteristic	
Product related conditions, e.g. the concentration of the substance in a mixture, the physical state of that mixture (solid, liquid; if solid: level of dustiness), package design affecting exposure	Solid, low dustiness Liquid
Amounts used	
Amounts used at a workplace (per task or per shift); note: sometimes this information is not needed for assessment of worker's exposure	Not applicable
Frequency and duration of use/exposure	
Duration per task/activity (e.g. hours per shift) and frequency (e.g. single events or repeated) of exposure	More than 4 hours per day
Human factors not influenced by risk management	
Particular conditions of use, e.g. body parts potentially exposed as a result of the nature of the activity	Not applicable
Other given operational conditions affecting workers exposure	
Other given operational conditions: e.g. technology or process techniques determining the initial release of substance from process into workers environment; room volume, whether the work is carried out outdoors/indoors, process conditions related to temperature and pressure.	Indoors
Technical conditions and measures at process level (source) to prevent release	
Process design aiming to prevent releases and hence exposure of workers; this in particular includes	Not applicable

conditions ensuring rigorous containment; performance of containment to be specified (e.g. by quantification of residual losses or exposure)	
Technical conditions and measures to control dispersion from source towards the worker	
Engineering controls, e.g. exhaust ventilation, general ventilation; specify effectiveness of measure	1. Containment as appropriate 2. Good standard of general ventilation
Organisational measures to prevent /limit releases, dispersion and exposure	
Specific organisational measures or measures needed to support the functioning of particular technical measures (e.g. training and supervision). Those measures need to be reported in particular for demonstrating strictly controlled conditions (to justify exposure based waiving).	Not applicable
Conditions and measures related to personal protection, hygiene and health evaluation	
Personal protection, e.g. wearing of gloves, face protection, full body dermal protection, goggles, respirator; specify effectiveness of measure; specify the suitable material for the PPE (where relevant) and advise how long the protective equipment can be used before replacement (if relevant)	Not applicable
Conditions and measures related to hazards from physico-chemical properties (Oxidising)	
	General good practice for handling and storage of hazardous chemical substances. Do no eat, drink or smoke when using this product. Keep away from flammable, combustible and reducing substances

3 Exposure information and relevance to its source

Information for contributing scenario 1

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

Information for contributing scenario 2

A qualitative approach was used to conclude safe use for workers due to the physico-chemical hazard: oxidizing.

A human health assessment has not been performed as the substance does not meet the criteria for being classified as dangerous for the human.

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

No additional risk management measures, besides those that are mentioned above, are needed to guarantee safe use for workers.

For hazards derived from physico-chemical properties, downstream users can objectively evaluate their own likelihood and possible consequences of an incident by following methodology set in Appendix E-1 from Guidance on Information Requirements and Chemical Safety Assessment Part E: Risk Characterisation (http://guidance.echa.europa.eu/).

5 Additional good practice advice beyond the REACH CSA

Additional good practices (Operational Conditions and Risk Management Measures) beyond the REACH Chemical Safety Assessment established within Chemical Industry are also advised and

communicated through Safety Data Sheets. Such as:

- Containment as appropriate;
- Minimise number of staff exposed;
- Segregation of the emitting process;
- Effective contaminant extraction;
- Good standard of general ventilation;
- Minimisation of manual phases;
- Avoidance of contact with contaminated tools and objects;
- Regular cleaning of equipment and work area;
- Management/supervision in place to check that RMMs in place are being used correctly and OCs followed;
- Training staff on good practice;
- Good standard of personal hygiene;

1 Exposure scenario (3) **Professional use in formulation of preparations and end-use**	
Use descriptors related to the life cycle stage	SU22 PC0: Other: S50200 /4/11/12/16/17/37 PROC2/5/8a/8b/9/10/11/13/16/19/26 ERC8a/8b/8c/8d/8e/8f/9a/9b
Name of contributing environmental scenario (1) and corresponding ERC	1. Wide dispersive indoor use of processing aids in open systems (ERC8a) 2. Wide dispersive indoor use of reactive substances in open systems (ERC8b) 3. Wide dispersive indoor use resulting in inclusion into or onto a matrix (ERC8c) 4. Wide dispersive outdoor use of processing aids in open systems (ERC8d) 5. Wide dispersive outdoor use of reactive substances in open systems (ERC8e) 6. Wide dispersive outdoor use resulting in inclusion into or onto a matrix (ERC8f) 7. Wide dispersive indoor use of substances in closed systems (ERC9a) 8. Wide dispersive outdoor use of substances in closed systems (ERC9b)
List of names of contributing worker scenarios (2) and corresponding PROC	1. Use in closed, continuous process with occasional controlled exposure (PROC2) 2. Mixing or blending in batch processes for formulation of preparations* and articles (multistage and/or significant contact) (PROC5) 3. Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities (PROC8a) 4. Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities (PROC8b) 5. Transfer of substance or preparation into small containers (dedicated filling line, including weighing) (PROC9) 6. Roller application or brushing (PROC10) 7. Non industrial spraying (PROC11) 8. Treatment of articles by dipping and pouring (PROC13) 9. Using material as fuel sources, limited exposure to unburned product to be expected (PROC16) 10. Hand-mixing with intimate contact and only PPE available (PROC19) 11. Handling of solid inorganic substances at ambient temperature (PROC26)

2.1 Contributing scenario (1) controlling environmental exposure

Wide dispersive indoor use of processing aids in open systems (ERC8a), of reactive substances in open systems (ERC8b), resulting in inclusion into or onto a matrix (ERC8c) and of substances in closed systems (ERC9a). Wide dispersive outdoor use of processing aids in open systems (ERC8d), of reactive substances in open systems (ERC8e) , of substances in closed systems (ERC9b) and wide dispersive outdoor use resulting in inclusion into or onto a matrix (ERC8f).

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

2.2 Contributing scenario (2) controlling worker exposure for professional use in formulation of preparations and end-use

All Process Categories are covered by this contributing scenario as all Operational Conditions (OCs) and Risk Management Measures (RMMs) are identical.

PROC2/5/8a/8b/9/10/11/13/16/19/26

A human health assessment has not been performed as the substance does not meet the criteria for

being classified as dangerous for human. However, as the substance is oxidising a qualitative risk characterisation has been performed.	
Product characteristic	
Product related conditions, e.g. the concentration of the substance in a mixture, the physical state of that mixture (solid, liquid; if solid: level of dustiness), package design affecting exposure	Solid, low dustiness Liquid, >25% substance in the product
Amounts used	
Amounts used at a workplace (per task or per shift); note: sometimes this information is not needed for assessment of worker's exposure	Not applicable
Frequency and duration of use/exposure	
Duration per task/activity (e.g. hours per shift) and frequency (e.g. single events or repeated) of exposure	More than 4 hours per day
Human factors not influenced by risk management	
Particular conditions of use, e.g. body parts potentially exposed as a result of the nature of the activity	Not applicable
Other given operational conditions affecting workers exposure	
Other given operational conditions: e.g. technology or process techniques determining the initial release of substance from process into workers environment; room volume, whether the work is carried out outdoors/indoors, process conditions related to temperature and pressure.	Indoors or outdoors
Technical conditions and measures at process level (source) to prevent release	
Process design aiming to prevent releases and hence exposure of workers; this in particular includes conditions ensuring rigorous containment; performance of containment to be specified (e.g. by quantification of residual losses or exposure)	Not applicable
Technical conditions and measures to control dispersion from source towards the worker	
Engineering controls, e.g. exhaust ventilation, general ventilation; specify effectiveness of measure	1. Containment as appropriate 2. Good standard of general ventilation
Organisational measures to prevent /limit releases, dispersion and exposure	
Specific organisational measures or measures needed to support the functioning of particular technical measures (e.g. training and supervision). Those measures need to be reported in particular for demonstrating	Not applicable

strictly controlled conditions (to justify exposure based waiving).	
Conditions and measures related to personal protection, hygiene and health evaluation	
Personal protection, e.g. wearing of gloves, face protection, full body dermal protection, goggles, respirator; specify effectiveness of measure; specify the suitable material for the PPE (where relevant) and advise how long the protective equipment can be used before replacement (if relevant)	Not applicable.
Conditions and measures related to hazards from physico-chemical properties (Oxidising)	
	General good practice for handling and storage of hazardous chemical substances. Do no eat, drink or smoke when using this product. Keep away from flammable, combustible and reducing substances.

3 Exposure information and relevance to its source

Information for contributing scenario 1

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

Information for contributing scenario 2

A qualitative approach was used to conclude safe use for workers due to the physico-chemical hazard: oxidizing.

A human health assessment has not been performed as the substance does not meet the criteria for being classified as dangerous for the human.

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

No additional risk management measures, besides those that are mentioned above, are needed to guarantee safe use for workers.

For hazards derived from physico-chemical properties, downstream users can objectively evaluate their own likelihood and possible consequences of an incident by following methodology set in Appendix E-1 from Guidance on Information Requirements and Chemical Safety Assessment Part E: Risk Characterisation (http://guidance.echa.europa.eu/).

5 Additional good practice advice beyond the REACH CSA

Additional good practices (Operational Conditions and Risk Management Measures) beyond the REACH Chemical Safety Assessment established within Chemical Industry are also advised and communicated through Safety Data Sheets. Such as:

- Containment as appropriate;
- Minimise number of staff exposed;
- Segregation of the emitting process;
- Effective contaminant extraction;
- Good standard of general ventilation;
- Minimisation of manual phases;
- Avoidance of contact with contaminated tools and objects;
- Regular cleaning of equipment and work area;
- Management/supervision in place to check that RMMs in place are being used correctly and OCs followed;
- Training staff on good practice;
- Good standard of personal hygiene;

1 Exposure scenario (4) **Consumer end-use of fertilizers and other products**	
Use descriptors related to the life cycle stage	SU21 PC0: Other: S50200 /4/12/35/39 ERC8a/8b/8d/8e/9a/9b
Name of contributing environmental scenario (1) and corresponding ERC	1. Wide dispersive indoor use of processing aids in open systems (ERC8a)

	2. Wide dispersive indoor use of reactive substances in open systems (ERC8b) 3. Wide dispersive outdoor use of processing aids in open systems (ERC8d) 4. Wide dispersive outdoor use of reactive substances in open systems (ERC8e) 5. Wide dispersive indoor use of substances in closed systems (ERC9a) 6. Wide dispersive outdoor use of substances in closed systems (ERC9b)
List of names of contributing consumer scenarios (2) and corresponding PC and sub-product categories if applicable	1. Pyrotechnical products (PC0) 2. Anti-Freeze and de-icing products (PC4) 3. Fertilizers (PC12) 4. Washing and cleaning products (including solvent based products) (PC35) 5. Cosmetics, personal care products (PC39)

2.1 Contributing scenario (1) controlling environmental exposure

Wide dispersive indoor use of processing aids in open systems (ERC8a), of reactive substances in open systems (ERC8b) and wide dispersive indoor use of substances in closed systems (ERC9a). Wide dispersive outdoor use of processing aids in open systems (ERC8d), of reactive substances in open systems (ERC8e) and wide dispersive outdoor use of substances in closed systems (ERC9b).

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

2.2 Contributing scenario (2) Consumer end-use of fertilizers and other products

All Product Categories are covered by this contributing scenario as all Operational Conditions (OCs) and Risk Management Measures (RMMs) are identical. During consumer use exposure to fertilizers (PC12) and the other products (PC0/4/35) can occur. Consumer use of cosmetics (PC39) is covered by the Cosmetics Directive.

A human health assessment has not been performed as the substance does not meet the criteria for being classified as dangerous for human. However, as the substance is oxidising a qualittative risk characterisation has been performed.

Product characteristic	
Product related conditions, e.g. the concentration of the substance in a mixture, the physical state of that mixture (solid, liquid; if solid: level of dustiness), package design affecting exposure	Solid, low dustiness Liquid
Amounts used	
Amounts used per event	Not applicable
Frequency and duration of use/exposure	
Duration of exposure per event and frequency of events; please note: Tier 1 exposure assessment usually refers to external event exposure, without taking into account the duration and frequency of the event (see Guidance Chapter R.15);	Not applicable
Human factors not influenced by risk management	
Particular conditions of use, e.g. body parts potentially exposed; population potentially exposed (adults, children)	Not applicable
Other given operational conditions affecting workers exposure	
Other operational conditions e.g. room volume, air exchange rate, outdoor or indoor use	Indoors or outdoors
Conditions and measures related to information and behavioral advice to consumers	

Safety advice to be communicated to consumers in order to control exposure, e.g. technical instruction, behavioral advice;	Not applicable
Conditions and measures related to personal protection and hygiene	
Personal protection, e.g. wearing of gloves, face protection, full body dermal protection, goggles, respirator; specify effectiveness of measure; specify the suitable material for the PPE (where relevant) and advise how long the protective equipment can be used before replacement (if relevant).	1. Instructions addressed to the consumer via product labelling
3 Exposure information and reference to its source	
Information for contributing scenario 1	
An environmental assessment has not been performed as the substance does not meet the criteria for being classified as dangerous for the environment.	
Information for contributing scenario 2	
A qualitative approach was used to conclude safe use for consumers due to the physico-chemical hazard: oxidizing. A human health assessment has not been performed as the substance does not meet the criteria for being classified as dangerous for the human.	
4 Guidance to DU to evaluate whether he works inside the boundaries set by the ES	
No additional risk management measures, besides those that are mentioned above, are needed to guarantee safe use for consumers for use of fertilisers and other products.	