



MATERIAL SAFETY DATA SHEET

In accordance with Regulation (EU) 2015/830
(WIGOR S, WIGOR S PRO)

Developed: 10.03.2006

Revision: 04.05.2017

Version: 2.0

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

1.1. Identification of the product

Trade name: **WIGOR S, WIGOR S PRO**

1.2. Identification of significant applications of the substance or preparation and applications that are not recommended

Wigor S, a mixture of elementary sulphur with bentonite, is a granulated mineral fertilizer for plant nutrition. It can be used independently or in mixes with other fertilizers that do not contain incompatible materials as specified in Section 10.

1.3. Manufacturer information

Supplier: "Siarkopol" TARNOBRZEG Chemical Plants Ltd.
Address: ul. Chemiczna 3, 39-400 Tarnobrzeg
Tel./Fax: (00-48-15) 856 58 01 / (00-48-15) 822 97 97
E-mail: sekretariat@zchsiarkopol.pl

1.4. Emergency telephone:

(00-48-15) 855 41 14; 856 55 55

SECTION 2. HAZARD IDENTIFICATION

Hazards	Classification	Acc to Regulation (EC) No. 1272/2008 (CLP)+ additional classification:
effects of physical and chemical properties		Not classified. No hazard.
for humans		Irritating effects on skin: Skin Irritant. 2 (H315 Causes skin irritation).
for environment		Not classified. No hazard.

2.2. Labeling



GHS Pictograms: GHS07

Signal Word: **Warning**

Hazard Statement:

H315 Causes skin irritation

Precautionary Statement

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

P302 + P352 IF ON SKIN: Wash with plenty of soap and water.

P332 + P313 If skin irritation occurs: Get medical advice/attention.

2.3. Other hazards

None.

SECTION 3. COMPOSITION/INFORMATION ABOUT INGREDIENTS

3.2. Mixtures



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<u>Substance name</u>	<u>% by weight</u>	<u>CAS No.</u>	<u>EC No.</u>	<u>Index No.</u>	<u>CLP Classification</u>	<u>Registration No.</u>
Sulphur	> 80	7704-34-9	231-722-6	016-094-00-1	Skin Irritant 2, H315	01-2119487295-27-XXXX

Mixture of sulphur and bentonite (mineral clay containing 70-80% montmorillonite).

SECTION 4. FIRST-AID MEASURES

4.1. Description of the first-aid measures

Inhalation:

Getting the victim into fresh air should be sufficient. Seek medical advice if symptoms persist or when feeling unwell.

Skin contact:

Change contaminated clothing. Carefully wash the contaminated skin with soap and water, then rinse with plenty of water. Seek medical advice if symptoms persist or in the case of irritation.

Eye contact:

Rinse eyes with wide open lids using running water for a few minutes. Seek medical advice if irritation symptoms persist.

Indigestion:

Rinse the mouth with water. Give a large amount of water to drink. You may give a 5% sodium bicarbonate solution to drink followed by giving a laxative. Consult a doctor if you feel unwell.

4.2. Main acute and delayed symptoms and effects of exposure

Not likely to occur.

4.3. Recommendations related to emergency medical aid and specific handling of the affected person

Recommendations for doctors: symptomatic treatment.

Show the safety data sheet, label or container to the medical personnel providing aid.

SECTION 5. FIRE-FIGHTING MEASURES

5.1. Extinguishing media

Suitable extinguishing media: Sprayed water, foam, CO₂ and other available extinguishing media. Use portable extinguishing equipment and sprayed water to extinguish small fire. Use droplet and mist water to extinguish large fire. Water mist is efficient in rooms.

Extinguishing media to avoid: Hard jet of water.

5.2. Specific hazards related to the substance or preparation

Fertilizers containing sulphur pose a risk of fertilizer ignition. Burning sulphur results in the release of toxic (by inhalation) and irritating gas – sulphur dioxide SO₂.

Fertilizer kept in unit packages exposed to fire or high temperatures should be cooled down with spray water, removed from the exposure area, if possible, and kept cool.

Eliminate (minimize) fertilizer dusting as there is a limited (minimum) risk of forming an explosive mixture with air.

5.3. Information for fire-fighters

Use protective equipment for the upper respiratory tract and the body. Carry an explosimeter.

SECTION 6. ACCIDENTAL RELEASE MEASURES

6.1. Individual precautions, personal protective equipment and emergency procedures

Clear the area of all personnel not participating in hazard elimination operations. Notify respective response teams. Do not allow personnel without required protection to enter the exposure area. Avoid inhaling vapors and dust. Use adequate personal protective equipment - see section 8 of this safety data sheet.

If more intensive dusting occurs during works related to the cleaning of the accidentally released product – avoid uplifting the dust. If dust is released in confined space, provide adequate ventilation. Eliminate possible sources of ignition.

6.2. Environmental precautions:



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Not applicable.

6.3. Methods and materials to avoid contamination expansion and cleaning

Collect the released material. If the collected material cannot be reused within the intended application range and is classified as waste, dispose in accordance with the provisions of Section 13 of this MSDS.

6.4. References to other sections

Refer also to sections 8 and 13 of this safety data sheet.

SECTION 7. HANDLING AND STORAGE

7.1. Conditions for safe handling

Due to the limited risk of forming explosive mixtures of the fertilizer dust and air – eliminate (minimize) the risk of dust generation.

Do not allow accumulation of dust and use adequate exhausts in locations where fertilizer dust may be released in connection with the specific operations at all stages of handling the fertilizer (filling or transferring the fertilizer to/from unit packages, storage, transport and use) carried out in closed areas. Eliminate potential sources of ignition.

Adhere to basic hygiene rules: do not eat, drink or smoke when using the product; wash hands with soap and water after each use. Take off contaminated clothing; wash it before reusing. Avoid contact with eyes and skin. Avoid inhaling dust. Use necessary personal protection equipment as indicated in section 8 of this safety data sheet.

7.2. Conditions for safe storage, including information on any non-compatible products

All storage rooms must be ventilated. Keep away from naked flame, heat sources and reactive products (strong bases, oxidants). Protect against moisture.

The fertilizer is stored in unit packages under roofing for protection against weather impact, particularly moisture. Due to the reactive sulphur contained in the fertilizer – protect the product against direct contact with pyrophoric iron, copper components, ammonia, nitric acid, metallic dust, chlorates, nitrates, perchlorates, permanganates, anhydrides.

7.3. Specific end-use application(-s)

Fertilizing.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure control parameters

Specification	NDS (OEL)	NDSP (TLV-C)	NDSch (STEL)
Sulphur particulates (other non-toxic industrial particulates, including particulates with < 2% of free (crystalline) silica) - respirable fraction.	10 mg/m ³	-----	-----

Regulation of the Minister of Labor and Social Policy of 6 June 2014 on maximum permissible concentration and intensity of agents harmful to health in the working environment (Journal of Laws 2014 item 817 as amended).

Guidelines for monitoring of airborne levels of hazardous substances – measurement methodology:

- Polish Regulation of the Ministry of Health dated 02 February 2011 and concerning the tests and measurements of health hazards at the workplace (Journal of Laws, no. 33 item 166).
- PN-89/Z-01001/06 Air purity protection. Nomenclature, definitions and units. Nomenclature for workplace air quality testing.
- PN-89/Z-04008/07 Air purity protection. Sampling. Principles of air sampling at workplaces and interpretation of results.
- PN-EN-689:2002 Workplace atmospheres. Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy.

Product DNEL: no data
PNEC: no data

Sulphur DNEL: not applicable (non-toxic substance)
PNEC: not applicable (non-toxic substance)

8.2. Exposure controls

Technical measures to prevent exposure:

Handling the fertilizer in closed areas should be carried out with general ventilation system in operation. Working stations for handling the fertilizer in closed rooms should be provided with local exhausts and adequate



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extinguishing equipment.

Eye and face protection:

Tightly fitting safety goggles are recommended.

Skin protection:

Wear fabric gloves, preferably made of cotton, with leather protective sections. Use clothing made of close-weave fabric and safety shoes.

Respiratory protection:

Not required under normal conditions and with adequate ventilation provided.

If large amounts of fertilizer dust are generated (e.g. after spill or crushing), use filtering half masks. In case of fire and ignition of the sulphur contained in the fertilizer, use respirators with required cartridges.

Thermal hazards:

N/A

Environmental exposure control:

Not required.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

a) Form	: Greenish-yellowish-grayish solid (granulate)
b) Smell	: Characteristic
c) Odor threshold	: No data
d) pH	: Neutral or slightly basic (100 g/l at 20°C)
e) Melting/freezing points	: No data
f) Initial boiling point and boiling range	: No data
g) Flash point	: No data
h) Evaporation rate	: No data
i) Combustibility (solid, gas)	: No data
j) Upper/lower flammability limit or upper/lower explosive limit	: Not applicable
k) Vapor pressure	: 0.0001 mmHg w 20°C
l) Vapor density	: No data
m) Relative density	: 2.07 g/cm ³ at 20°C
n) Solubility	: Water causes the pellets to expand and decompose. m An aqueous solution is formed as a result.
o) N-octanol/water partition coefficient (Pow)	: No data
p) Self-ignition temperature	: No data. Limited risk of self-ignition in contact with oxidants or mixture with carbon, soot, fat or oils.
q) Decomposition temperature	: No data
r) Viscosity	: No data
s) Explosive properties	: No explosive properties. Limited (minimum) risk of forming an explosive mixture with air in specific conditions – extreme dusting.
t) Oxidizing properties	: No data

9.2. Other information

Surface tension	: No data
Bulk density	: 1100 - 1300 kg/m ³

SECTION 10. STABILITY AND REACTIVITY

10.1. Reactivity

The mixture is not reactive.

10.2. Chemical stability

The mixture is stable during storage and handling under normal ambient conditions, nominal temperature and pressure.

10.3. Dangerous reactions



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Avoid direct contact with pyrophoric iron, copper components, ammonia, nitric acid, metallic dust, chlorates, nitrates, perchlorates, permanganates and anhydrides.

10.4. Conditions to avoid

Avoid contact with naked flame due to the properties of sulphur contained in the fertilizer.

10.5. Materials to avoid

Avoid contact with pyrophoric iron, copper components, ammonia, nitric acid, metallic dust, chlorates, nitrates, perchlorates, permanganates and anhydrides. Sulphur contained in the fertilizer is corrosive to metals.

10.6. Hazardous decomposition products

No hazardous decomposition products identified. Combustion products released under fire conditions. See section 5 of this safety data sheet.

SECTION 11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity:

Product:

LD50: >no data (oral, rat)

LD50: >no data (skin, rabbit)

LC50: >no data (inhalation, rat, 4h)

Sulphur:

LD50: >2000 mg/kg BM (oral, rat)

LD50: >2000 mg/kg BM (skin, rabbit)

LC50: >5430 mg/m³ (inhalation, rat, 4h)

Ingestion: nausea and vomiting occur, or, in more severe cases hand and leg shaking and dizziness may result.

Caustic/irritating effects on skin:

The mixture is irritating to the skin. The product may be irritating to eyes and results in reddening or even pain.

Severe disturbances to eyes/irritating effects on eyes:

Based on the available information, classification criteria are not met. The product may be irritating to eyes and results in reddening or even pain.

Allergic effects on respiratory system or skin:

Based on the available information, classification criteria are not met.

Mutagenic effects on reproductive cells:

Based on the available information, classification criteria are not met.

Carcinogenic effects:

Based on the available information, classification criteria are not met.

Reproductive effects:

Based on the available information, classification criteria are not met.

Toxic effects on specific organs – one-time exposure:

Based on the available information, classification criteria are not met.

Inhaling vapors results in shortening breath with coughing. When swallowed, nausea and vomiting occur.

Toxic effects on specific organs – repeated exposure:

Based on the available information, classification criteria are not met.

Persons under repeated exposure to the inhalation of air containing a large amount of sulphur vapors and dust may suffer from sensitization of mucous membranes, headaches and dizziness, excitement or sedation, digestive disorders, dryness and cracking of the skin.

Hazards related to aspiration:

Based on the available information, classification criteria are not met.

SECTION 12. ECOLOGICAL INFORMATION

12.1. Toxicity:

Aquatic environment:

Sulphur: examination of acute and chronic toxicity in aquatic environment – not applicable, as the substance is not soluble in water.

Sediment:

Sulphur: examination of toxicity in sediment organisms – not applicable, as the substance is not soluble in water.

Land environment:

Examination of toxic effects on invertebrates: no data.

Examination of toxic effects on plants: no data.



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Examination of toxic effects on earthworms: no data.

12.2. Persistence and biodegradability

The product is subject to physical and chemical reactions due to the specific composition of sulphur-based fertilizers. Under the impact of moisture (water), the pellets decompose and release minor amounts of elementary sulphur. If such sulphur is left in the soil in nominal dosages it does not pose a significant hazard to the environment, as its amount is gradually reduced – being used for synthesis of proteins, chlorophyll, etc.; it is used on the surface by microorganisms and plants.

12.3. Bioaccumulation

No data.

12.4. Mobility in soil

No data.

12.5. PBT and vPvB assessment results

No data.

12.6. Other hazardous effects

If large amounts of fertilizer are left on the soil locally, there is a risk of a limited release of sulphur to form sulfates and local acidification of the soil under the impact of weather conditions.

SECTION 13. DISPOSAL CONSIDERATIONS

13.1. Waste disposal methods

Wastes related to fertilizer usage may include: fertilizer contaminated with non-fertilizer chemicals or used product packaging. If the fertilizer cannot be managed regardless its form, it can be considered as waste as well. Its classification and disposal conditions depend on individual agreements with respective administrative bodies. Packaging that has not been damaged can be reused for the same purpose as originally. Damaged packaging classified as packaging waste is: in the case of physical entities – treated as municipal waste and disposed of as required by the regulations in the commune of waste generator; in the case of business entities – disposed and/or recovered by the owner of wastes, in accordance with the applicable national laws.

The Act of 14 December 2012 on waste (Journal of Laws of 2013, item 21 as amended).

The Act of 13 June 2013 on management of packaging and packaging waste (Journal of Laws of 2013, item 888, as amended).

Regulation of the Minister of Environment of 9 December 2014 on waste catalogue (Journal of Laws of 2014, item 1923).

SECTION 14. TRANSPORT INFORMATION

The product is not subject to the regulations on the carriage of dangerous goods contained in ADR (road transport), RID (rail transport), IMDG (maritime transport).

14.1. UN number	Not applicable
14.2. Proper shipping name (UN)	Not applicable
14.3. Transportation hazard class	Not applicable
14.4. Packaging group	Not applicable
14.5. Environmental hazards	Not applicable
14.6. Special precautions for users	Not applicable
14.7. Bulk transport in accordance to MARPOL Annex II 73/78 and IBC Code	Not applicable

SECTION 15. REGULATORY INFORMATION

15.1. Health, safety and environmental protection regulations related specifically to the substance or preparation.

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

Regulation (EC) No. 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No. 793/93 and Commission Regulation (EC) No. 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC (corrected in Official Journal L 136 of 29.05.2007; as amended).

Commission Regulation (UE) No. 2015/830 of 28 May 2015 amending Regulation (EC) No. 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (Official Journal L 132/8 of 29.05.2015).

Regulation (EC) No. 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging



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of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No. 1907/2006 (Official Journal L No. 353 of 31.12.2008; as amended).

Regulation of the Minister of Health of 12 February 2015 on the criteria and method of classification of chemical substances and preparations (Journal of Laws of 2015, item 208).

Regulation of the Minister of Health and Social Policy of 26 September 1997 on general principles of work safety and hygiene (consolidated text of Journal of Laws of 2003, No. 169, item 1650; as amended).

Regulation of the Minister of Economy of 8 July 2010 on minimum requirements for the safety and health protection at work connected with a possible occurrence of potentially explosive atmosphere at a work place (Journal of Laws of 2010, No. 138, item 931).

The Act of 24 August 1991 on fire protection (consolidated text, Journal of Laws of 2009, No. 178, item 1380 as amended).

The Act of 19 August 2011 on the transport of dangerous goods (Journal of Laws of 2011, No. 227, item 1367; as amended).

The Act of 14 December 2012 on waste (Journal of Laws of 2013, item 21 as amended).

15.2. Chemical safety assessment

The manufacturer has not performed the assessment of the preparation chemical safety.

SECTION 16. OTHER INFORMATION

Modifications introduced in this revision:

Revised for compliance with Regulation (EU) 2015/830. Revised to verify legal references. General MSDS revision.

Changes in the following MSDS sections: 2, 3, 8, 13, 15, 16.

List of abbreviations used in this safety data sheet:

OEL	Occupational Exposure Limit
STEL	Short-Term Exposure Limit
TLV-C	Threshold Limit Value - Ceiling
DNEL	Derived No Effect Level
PNEC	Predicted No Effect Concentration
LD ₅₀	Median lethal dosage, at which the death of 50% of the tested animals is observed
LC ₅₀	Median lethal concentration, at which the death of 50% of the tested animals is observed
vPvB	Very Persistent and Very Bioaccumulative (substance)
PBT	Persistent, Bioaccumulative and Toxic (substance)
RID	Regulations concerning the international carriage of dangerous goods by rail
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
IMDG	International Maritime Dangerous Goods Code

Literature and resources:

Regulations referred to in sections 2 – 15 of this material safety data sheet.

Information provided by Siarkopol TARNOBRZEG Chemical Plants Ltd.

The full list of applicable hazard phrases and precaution phrases, which has not been provided in sections 2 - 15 of this material safety data sheet.

Not applicable.

Recommendations related to personnel training:

All personnel handling the product should be trained in health risks, hygienic requirements, usage of personal protection equipment, accident prevention, rescue operations, etc.

Exposure scenarios: unavailable.

NOTE: This material safety data sheet has been developed based on the composition and properties of product ingredients contained in respective safety data sheets, information on product properties, applicable regulations and our current knowledge and experience. This material safety data sheet is not a product quality certificate. Information contained in this data sheet should be only used as guidance for safe handling during transport, distribution, usage and storage. Information contained in this safety data sheet refers only to the specific physical form of the product and its use being compliant with the intended use specified in the data sheet. Users of the product must ensure adherence to all applicable standards and regulations and they are responsible for the effects resulting from improper use of the information contained in this safety data sheet or improper application of the product.



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ENCLOSURES TO MSDS – EXPOSURE SCENARIOS

Exposure scenarios for mixture main ingredient – sulphur.

Section 1 Title of Exposure Scenario No. 1	
Title	
Formulation (mixing) and (Re)packing of Substances and Mixtures – Industrial	
Use Descriptor	
Sector(s) of Use	3, 10
Process Categories	1, 2, 3, 4, 5, 8a, 8b, 9, 14, 15, 23, 24
Environmental Release Categories	2
Specific Environmental Release Category	ESVOC SpERC 2.2.v1
Processes, tasks, activities covered	
Loading (including marine vessel/barge, rail/road car and IBC loading) and repacking (including drums and small packs) of substance, including its sampling, storage, unloading, maintenance and associated laboratory activities.	
Assessment Method	
See Section 3.	
Section 2 Operational conditions and risk management measures	
Section 2.1 Control of worker exposure	
Product characteristics	
Physical form of product	Solid at STP, liquid at elevated operating temperature, vapour pressure < 0,5 kPa.
Concentration of substance in product	Covers percentage substance in the product up to 100% (unless stated otherwise).
Amount used	Not applicable
Frequency and duration of use/exposure	Covers daily exposures up to 8 hours (unless stated otherwise).
Human factors not influenced by risk management	Not applicable
Other Operational Conditions affecting exposure	Operation is carried out at elevated temperature (> 20°C above ambient temperature). Assumes a good basic standard of occupational hygiene is implemented.
Contributing scenarios	Specific Risk Management Measures (RMM) and Operating Conditions (OC)
General measures (skin irritants)	Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance is likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent/minimize exposures and to report any skin problems that may develop.
General exposures (closed systems)	No other specific measures identified.
General exposures (closed systems), With sample collection	No other specific measures identified.
General exposures (closed systems), Batch process, With sample collection	No other specific measures identified.
Process sampling	No other specific measures identified.
General exposures (open systems)	Ensure operation is undertaken outdoor or provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).
Mixing operations (open systems)	Ensure operation is undertaken outdoor or provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).
Milling, grinding and similar activities.	Provide extract ventilation to points where emissions occur.



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Small package filling	Provide extract ventilation to points where emissions occur.
Granulating	No other specific measures identified.
Laboratory activities	Handle under local extract ventilation or ventilation exhaust.
Bulk transfers, Dedicated facility	Ensure operation is undertaken outdoor.
Equipment Cleaning and Maintenance	Dry the system prior to cleaning or maintenance. Keep dry under sealed closing until disposal or recycling.
General exposures (open systems) elevated temperature	No other specific measures identified.
Bulk product storage	Ensure operation is undertaken outdoor or provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).

Section 2.2 Control of environmental exposure

Not applicable

Section 3 Exposure Estimation

3.1. Health

The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

3.2. Environment

Not applicable

Section 4 Guidance to check compliance with the Exposure Scenario

4.1. Health

Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. Risk Management Measures are based on qualitative risk characterisation.

Available hazard data do not support the need for a DNEL to be established for other health effects. Users are advised to consider national Occupational Exposure Limits or other equivalent values.

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

4.2. Environment

Not applicable

Section 1 Title of Exposure Scenario No. 2

Title

Use of Substance in agrochemicals – Professional

Use descriptors

Sector(s) of Use (SoU)	22
Process Categories (PROC)	1, 4, 8a, 8b, 11, 13
Environmental Release Categories (ERC)	8a, 8d
Specific Environmental Release Categories (SPERC)	ESVOC SpERC 8.11a.v1

Processes, tasks, activities covered

Use as an agrochemical excipient for application by manual or machine spraying, smokes and fogging, including equipment clean-downs and disposal.

Assessment method

See Section 3

Section 2 Operational Conditions and Risk Management Measures

Section 2.1 Control of worker exposure

Product characteristics

Physical form of product	Solid at STP, liquid at elevated operating temperature, vapour pressure < 0,5 kPa.
Concentration of substance in product	Covers percentage substance in the product up to 100% (unless stated otherwise).
Amounts used	Not applicable
Frequency and duration of use/exposure	Covers daily exposures up to 8 hours (unless stated otherwise).
Human factors not influenced by risk management	Not applicable
Other operational	Operation is carried out at elevated temperature (> 20°C above ambient



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conditions affecting exposure	temperature). Assumes a good basic standard of occupational hygiene is implemented.
Contributing scenarios	Specific Risk Management Measures (RMM) and Operating Conditions (OC)
General measures (skin irritants)	Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance is likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent/minimize exposures and to report any skin problems that may develop. Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release e.g. spraying.
General exposures (closed systems)	No other specific measures identified.
General exposures (open systems)	Ensure operation is undertaken outdoor or provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).
Bulk transfers, dedicated facility	Ensure operation is undertaken outdoor or provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).
Spraying	Wear a respirator conforming to EN140 with Type A/P2 filter or better.
Dripping, immersion and pouring	Avoid carrying out activities involving exposure for more than 4 hours.
Equipment cleaning and maintenance	Avoid carrying out activities involving exposure for more than 1 hour.

Section 2.2 Control of environmental exposure

Not applicable

Section 3 Exposure estimation

3.1. Health

The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

3.2. Environment

Not applicable

Section 4 Guidance to check compliance with the Exposure Scenario

4.1. Health

Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. Risk Management Measures are based on qualitative risk characterization.

Available hazard data do not support the need for a DNEL to be established for other health effects. Users are advised to consider national Occupational Exposure Limits or other equivalent values.

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

4.2. Environment

Not applicable

Section 1 Title of Exposure Scenario No. 3

Title

Use of Substance in agrochemicals - Consumer

Use descriptors

Sector(s) of Use (SoU)	21
Process Categories (PROC)	12, 22, 27
Environmental Release Categories (ERC)	8a, 8d
Specific Environmental Release Categories (SPERC)	ESVOC SpERC 8.11b.v1

Processes, tasks, activities covered

Covers the consumer use in agrochemicals in liquid and solid forms.

Assessment method

See Section 3



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Section 2 Operational Conditions and Risk Management Measures		
Section 2.1 Control of worker exposure		
Product characteristics		
Physical form of product	Solid at STP, liquid at elevated operating temperature, vapour pressure < 0,5 kPa.	
Concentration of substance in product	Covers percentage substance in the product up to 100% (unless stated otherwise).	
Amounts used	Unless otherwise stated, covers use amounts up to 37500 g; covers skin contact area up to 6600 cm ²	
Frequency and duration of use/exposure	Unless otherwise stated, covers use frequency up to 4 times per day; covers exposure up to 8 hours per event.	
Other operational conditions affecting exposure	Unless otherwise stated assumes use at ambient temperatures; assumes use in a 20 m ³ room; assumes use with typical ventilation.	
Contributing scenarios	Specific Risk Management Measures (RMM) and Operating Conditions (OC)	
PC12: Fertilizers	OC	Unless otherwise stated, covers concentrations up to 90%; covers use up to 1 days/year; covers use up to 1 time/on day of use; covers skin contact area up to 857.50 cm ² ; for each use event, assumes swallowed amount of 0.3 g; for each use event, covers use amounts up to 2500 g; covers outdoor use.
	RMM	No specific RMMs identified beyond those OCs stated.
PC22: Lawn and garden preparations, including fertilizers	OC	Products containing Sulphur in high percentages (assume 90%) are sold for acidification of soil, to treat certain plant diseases (e.g. scab on potatoes) and as worm-deterrent (http://www.progreen.co.uk/index.php?c=61&p=132). The products are provided as prill (pellets) in bags of 1 kg. Recommended application frequency: 1 per year.
	RMM	No specific RMMs identified beyond those OCs stated.
PC27: Plant protection products	OC	Unless otherwise stated, covers concentrations up to 90%; covers use up to 1 day/year; covers use up to 1 time/on day of use; covers skin contact area up to 857.50 cm ² ; for each use event, assumes swallowed amount of 0.3 g; for each use event, covers use amounts up to 2500 g; covers outdoor use.
	RMM	No specific RMMs identified beyond those OCs stated.
Section 2.2 Control of environmental exposure		
Not applicable		
Section 3 Exposure estimation		
3.1. Health		
The ECETOC TRA tool has been used to estimate consumer exposures, consistent with the content of ECETOC Report #107 and the Chapter R15 of the IR&CSA TGD. Where exposure determinants differ to these sources, then they are indicated.		
3.2. Environment		
Not applicable		
Section 4 Guidance to check compliance with the Exposure Scenario		
4.1. Health		
Predicted exposures are not expected to exceed the applicable consumer reference values when the operational conditions/risk management measures given in section 2 are implemented.		
Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.		
4.2. Environment		
Not applicable		

ACCEPTANCE: