

MSDS		0.1 Product	Zink Spray
MATERIAL SAFETY DATA SHEET		0.2 Status	Active
		0.3 Version	5
		0.4 Version date	19-11-2024

1. Identification of the substance/mixture and of the company		
1.1	Product identification	
Product name	Zink Spray	
Trade name	Zink Spray for horses	
Product code	ZINK0100	
Chemical description	Mixture	
UFI	1Q10-F0GF-000T-97MS	
REACH registration number	-	
1.2	Relevant identified uses of the substance or mixture and uses advised against	
Identified use(s)	Skin care for animals.	
Use(s) advised against	Not identified.	
1.3	Details of the supplier of the safety data sheet	
Company identification	Name	Hofman Animal Care B.V.
Contact details	Address	De Leemkoele 2
	Zip code	7468 DM
	Town	Enter
	Country	The Netherlands
	Telephone	+31 (0)548-545277
	E-mail	info@hofmananimalcare.nl
	Website	www.hofmananimalcare.com
1.4	Emergency telephone number	
Emergency telephone number	The Netherlands: National Poisoning Information Center – Bilthoven TEL: +31 (0)30 274 88 88 Belgium: Antipoison Center – Brussels TEL: +32 (0)70 245 245 (Only for the purpose of informing medical personnel in case of acute intoxications)	

2. Hazards identification	
2.1	Classification of the substance or mixture
Classification according to Regulation (EC) no. 1272/2008: Aerosol 1: Aerosol – category 1; H222; H229 Asp. Tox. 1: Aspiration hazard – category 1; H304 Eye Irrit. 2: Serious eye damage/eye irritation– category 2; H319 Aquatic Chronic 2: Hazardous to the aquatic environment (chronic)– category 2; H411 The full text of the (EU)H-statements can be found in section 16.	
2.2	Label elements
Labelling according to Regulation (EC) no. 1272/2008:	
Hazardous component(s)	-
Hazard pictogram(s)	  

Signal word		Danger					
Hazard statements		H222 Extremely flammable aerosol. H229 Pressurised container: May burst if heated. H319 Causes serious eye irritation. H411 Toxic to aquatic life with long lasting effects.					
Precautionary measures		P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P211 Do not spray on an open flame or other ignition source. P251 Do not pierce or burn, even after use. P273 Avoid release to the environment. P391 Collect spillage. P410+P412 Protect from sunlight. Do no expose to temperatures exceeding 50°C / 122°F.					
- Prevention							
- Response							
- Storage							
2.3	Other hazards						
Other hazards		In case of insufficient ventilation and/or through use, explosive/highly flammable mixtures may develop.					
Results of PBT and vPvB assessment		The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, Annex XIII.					
Endocrine disrupting properties		This product does not contain a substance that has endocrine disrupting properties with respect to non-target organisms as no components meets the criteria.					
3. Composition / information on ingredients							
3.1	Substances		Not applicable (mixture).				
3.2	Mixtures		Relevant ingredients:				
Name component(s)		Weight %	CAS no.	EINECS no.	Index no.	REACH no.	Classification
Butane		25 ≤ 30	106-97-8	203-448-7	601-004-00-0	01-2119474691-32	Flam. Gas 1; H220 Liquefied Gas; H280
Ethanol; ethyl alcohol		20 ≤ 25	64-17-5	200-578-6	603-002-00-5	01-2119457610-43	Flam. Liq. 2; H225 Eye Irrit. 2; H319
Propane		12.5 ≤ 15	74-98-6	200-827-9	601-003-00-5	01-2119486944-21	Flam. Gas 1; H220 Liquefied Gas; H280
White mineral oil (petroleum)		10 ≤ 12.5	8042-47-5	232-455-8		01-2119487078-27	Asp. Tox. 1; H304
Zinc oxide		10 ≤ 25	1314-13-2	215-222-5	030-013-00-7	01-2119463881-32	Aquatic Acute 1; H400 Aquatic Chronic 1; H410
Hydrocarbons, C6-C7, isoalkanes, cyclic, <5% n-hexane		5 ≤ 10	-	926-605-8		01-2119486291-36	Flam. Liq. 2; H225 STOT SE 3; H336 Asp. Tox. 1; H304 Aquatic Chronic 2; H411 EUH066
Propan-2-ol; isopropyl alcohol; isopropanol		1 ≤ 2.5	67-63-0	200-661-7	603-117-00-0	01-2119457558-25	Flam. Liq. 2; H225 STOT SE 3; H336 Asp. Tox. 1; H304 Aquatic Chronic; H411 EUH066
Allantoin		0.1 ≤ 0.5	97-59-6	202-592-8		01-2119953242-43	-
The full text of the (EU)H-statements can be found in section 16.							

Specific concentration limit, multiplication factor, acute toxicity estimation		
Name component(s)	CAS no.	SCL, M-factor, ATE
Ethanol; ethyl alcohol	64-17-5	Inhalation: LC50 = 95.6 mg/l (vapours) Oral: LD50 = 6,200 mg/kg Eye Irrit. 2; H319: >= 50 -100
White mineral oil (petroleum)	8042-47-5	Inhalation: LC50 = > 5,000 mg/l (vapours) Dermal: LD50 = > 2,000 mg/kg Oral: LD50 = > 5,000 mg/kg
Zinc oxide	1314-13-2	Dermal: LD50 = > 2,000 mg/kg Oral: LD50 = > 5,000 mg/kg Aquatic Acute 1; H400: M=1 Aquatic Chronic 1; H410: M=1
Hydrocarbons, C6-C7, isoalkanes, cyclic, <5% n-hexane	-	Inhalation: LC50 = 73,860 mg/l (vapours) Oral: LD50 = > 5,000 mg/kg
Propan-2-ol; isopropyl alcohol; isopropanol	67-63-0	Dermal: LD50 = 13,900 mg/kg Oral: LD50 = 5,840 mg/kg
Allantoin	97-59-6	Dermal: LD50 = > 5,000 mg/kg Oral: LD50 = > 5,000 mg/kg
4. First aid measures		
4.1	Description of first aid measures	
General	When in doubt or if symptoms are observed, get medical advice. If medical advice is needed, have product container or label at hand.	
First aid measures in case of inhalation	Provide fresh air. If breathing is irregular or stopped, administer artificial respiration. In case of respiratory tract irritation, consult a physician.	
First aid measures in case of skin contact	After contact with skin, wash immediately with plenty of water and soap. Take off contaminated clothing and wash it before reuse.	
First aid measures in case of eye contact	After contact with the eyes, rinse with water with the eyelids open for a sufficient length of time, then consult an ophthalmologist immediately.	
First aid measures in case of ingestion	Observe risk of aspiration if vomiting occurs. If accidentally swallowed rinse the mouth with plenty of water (only if the person is conscious) and obtain immediate medical attention.	
4.2	Most important symptoms and effects, both acute and delayed	
IF SWALLOWED: Subsequent observance for pneumonia and lung oedema. Symptoms may develop several hours following exposure; medical observation therefore necessary for at least 48 hours.		
4.3	Indication of any immediate medical attention and special treatment needed	
Treat symptomatically.		
5. Firefighting measures		
5.1	Extinguishing media	
Suitable extinguishing media	Water spray jet, carbon dioxide (CO2), foam, extinguishing powder.	
Unsuitable extinguishing media	Full water jet.	
5.2	Special hazards arising from the substance or mixture	
Special exposure hazards	Extremely flammable aerosol. Pressurized container: May burst if heated. Vapours can form explosive mixtures with air.	
5.3	Advice for firefighters	
Special protective equipment	In case of fire: Wear self-contained breathing apparatus.	
Special procedures	Use water spray jet to protect personnel and to cool endangered containers. Suppress gases/vapours/mists with water spray jet. Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.	
6. Accidental release measures		
6.1	Personal precautions, protective equipment and emergency procedures	
General advice	Remove all sources of ignition. Provide adequate ventilation. Do not breathe gas/fumes/vapour/spray. Avoid contact with skin, eyes and clothes. Use personal protection equipment.	

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Personal precautions	<i>For non-emergency personnel:</i> Remove persons to safety. Ventilate affected area. Do not breathe aerosol. <i>For emergency responders:</i> Wear breathing apparatus if exposed to vapours/dusts/aerosols.
6.2	<u>Environmental precautions</u>
Environmental precautions	Do not allow uncontrolled discharge of product into the environment. Explosion risk.
6.3	<u>Methods and material for containment and cleaning up</u>
Methods for cleaning up	Absorb with liquid-binding material (sand, diatomaceous earth, acid- or universal binding agents). Treat the recovered material as prescribed in the section on waste disposal.
6.4	<u>Reference to other sections</u>
Safe handling	See section 7.
Personal protection	See section 8.
Removal of the waste product	See section 13.
7. Handling and storage	
7.1	<u>Precautions for safe handling</u>
Handling	Do not pierce or burn, even after use.
Advice on general occupational hygiene	Remove contaminated, saturated clothing immediately. Draw up and observe skin protection programme. Wash hands and face before breaks and after work and take a shower if necessary. When using do not eat, drink, smoke, sniff.
Further information on handling	Heating causes rise in pressure with risk of bursting.
7.2	<u>Conditions for safe storage, including any incompatibilities</u>
Storage	Keep in a cool, well-ventilated place. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Protection against fire and explosion	Do not spray on naked flames or any incandescent material. Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F. Keep away from sources of ignition - No smoking. Take precautionary measures against static discharges. Vapours can form explosive mixtures with air.
Hints on joint storage	Do not store together with: oxidizing agent, pyrophoric or self-heating substances.
Suitable packaging material	No information available.
Unsuitable packaging material	No information available.
Further information on storage conditions	Keep away from food, drink and animal feedingstuffs.
7.3	<u>Specific end use(s)</u>
Pet care.	
8. Exposure controls / personal protection	
8.1	<u>Control parameters</u>
Occupational exposure limits	No information available.
Biological limit values	No information available.

DNELs

Relevant DNELs of components of the mixture						
Name of agent	Cas no	End-point	Threshold level	Protection goal, route of exposure	Used in	Exposure time
Ethanol; ethyl alcohol	64-17-5	DNEL	87 mg/kg BW/day	Oral	Consumer	Chronic - systemic effects
		DNEL	380 mg/m ³	Inhalation	Worker	Chronic - systemic effects
		DNEL	114 mg/m ³	Inhalation	Consumer	Chronic - systemic effects
		DNEL	343 mg/kg BW/day	Dermal	Worker	Chronic - systemic effects
		DNEL	206 mg/kg BW/day	Dermal	Consumer	Chronic - systemic effects
White mineral oil (petroleum)	8042-47-5	DNEL	40 mg/kg BW/day	Oral	Consumer	Chronic - systemic effects
		DNEL	220 mg/kg BW/day	Dermal	Worker	Chronic - systemic effects
		DNEL	92 mg/kg BW/day	Dermal	Consumer	Chronic - systemic effects
		DNEL	160 mg/m ³	Inhalation	Worker	Chronic - systemic effects
		DNEL	35 mg/m ³	Inhalation	Consumer	Chronic - systemic effects
Zinc oxide	1314-13-2	DNEL	5 mg/m ³	Inhalation	Worker	Chronic - systemic effects
		DNEL	0.5 mg/m ³	Inhalation	Worker	Chronic – local effects
		DNEL	83 mg/kg BW/day	Dermal	Worker	Chronic - systemic effects
		DNEL	2.5 mg/m ³	Inhalation	Consumer	Chronic - systemic effects
		DNEL	83 mg/kg BW/day	Dermal	Consumer	Chronic - systemic effects
		DNEL	0.83 mg/kg BW/day	Oral	Consumer	Chronic - systemic effects
Hydrocarbons, C6-C7, isoalkanes, cyclic, <5% n-hexane	-	DNEL	5,306 mg/m ³	Inhalation	Worker	Chronic - systemic effects
		DNEL	13,964 mg/kg BW/day	Dermal	Worker	Chronic - systemic effects
		DNEL	1,131 mg/m ³	Inhalation	Consumer	Chronic - systemic effects
		DNEL	1,377 mg/kg BW/day	Dermal	Consumer	Chronic - systemic effects
		DNEL	1,301 mg/kg BW/day	Oral	Consumer	Chronic - systemic effects
Propan-2-ol; isopropyl alcohol; isopropanol	67-63-0	DNEL	1,000 mg/m ³	Inhalation	Worker	Acute – systemic effects
		DNEL	178 mg/m ³	Inhalation	Consumer	Acute – systemic effects
		DNEL	51 mg/kg BW/day	Oral	Consumer	Acute – systemic effects
		DNEL	888 mg/kg BW/day	Dermal	Worker	Chronic - systemic effects



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		DNEL	500 mg/m ³	Inhalation	Worker	Chronic - systemic effects
		DNEL	319 mg/kg BW/day	Dermal	Consumer	Chronic - systemic effects
		DNEL	89 mg/m ³	Inhalation	Consumer	Chronic - systemic effects
		DNEL	26 mg/kg BW/day	Oral	Consumer	Chronic - systemic effects
Allantoin	97-59-6	DNEL	284 mg/kg BW/day	Dermal	Worker	Chronic - systemic effects
		DNEL	284 mg/kg BW/day	Dermal	Consumer	Chronic - systemic effects
		DNEL	56.8 mg/kg BW/day	Oral	Consumer	Chronic - systemic effects

PNECs

Relevant PNECs of components of the mixture					
Name of substance	Cas no	End-point	Threshold level	Environmental compartment	Exposure time
Ethanol; ethyl alcohol	64-17-5	PNEC	0.96 mg/l	Fresh water	
		PNEC	2.75 mg/l	Fresh water	Intermittent release
		PNEC	0.79 mg/l	Marine water	
		PNEC	3.6 mg/kg	Freshwater sediments	
		PNEC	2.9 mg/kg	Marine sediments	
		PNEC	380 mg/kg	Secondary poisoning	
		PNEC	580 mg/l	Microorganisms in sewage treatment	
Zinc oxide	1314-13-2	PNEC	0.63 mg/kg	Soil	
		PNEC	0.0179 mg/l	Fresh water	
		PNEC	0.009 mg/l	Marine water	
		PNEC	182.8 mg/kg	Freshwater sediments	
		PNEC	201.9 mg/kg	Marine sediments	
		PNEC	0.1245 mg/l	Microorganisms in sewage treatment	
		PNEC	103.4 mg/kg	Soil	
Propan-2-ol; isopropyl alcohol; isopropanol	67-63-0	PNEC	140.9 mg/l	Fresh water	
		PNEC	140.9 mg/l	Fresh water	Intermittent release
		PNEC	140.9 mg/l	Marine water	
		PNEC	552 mg/kg	Freshwater sediments	
		PNEC	552 mg/kg	Marine sediments	
		PNEC	160 mg/kg	Secondary poisoning	
		PNEC	2,251 mg/l	Microorganisms in sewage treatment	
Allantoin	97-59-6	PNEC	28 mg/kg	Soil	
		PNEC	1 mg/l	Fresh water	
		PNEC	10 mg/l	Fresh water	Intermittent release
		PNEC	0.1 mg/l	Marine water	
		PNEC	0.85 mg/kg	Freshwater sediments	
		PNEC	0.085 mg/kg	Marine sediments	
		PNEC	10,000 mg/l	Microorganisms in sewage treatment	
		PNEC	0.256 mg/kg	Soil	

Additional advice on limit values

To date, no national critical limit values exist.

8.2 Exposure controls

Appropriate engineering controls

If local exhaust ventilation is not possible or not sufficient, the entire working area should be ventilated by technical means.

Personal protection equipment

Eye / face protection

Wear eye protection/face protection. Suitable eye protection: Eye glasses with side protection EN 166.

Skin protection

Wear anti-static footwear and clothing.

Hand protection

When handling with chemical substances, protective gloves must be worn with the CE-label including the four control digits. The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances.

	Suitable material: NBR (Nitrile rubber) (0,35 mm) EN ISO 374 Breakthrough time: >= 480 mm For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.
Respiratory protection	Usually no personal respirative protection necessary.
Thermal hazards	No information available.
Environmental exposure controls	No information available.
9. Physical and chemical properties	
9.1	Information on basic physical and chemical properties
Physical state	Liquid.
Colour	White.
Odour	Like alcohol.
Melting point/freezing point	Not applicable.
Boiling point/range (1013 hPa)	< -20 °C.
Flammability	Not determined.
Lower and upper explosion limit	Lower explosion limit: 3.7 vol. %. Upper explosion limit: 15 vol. %.
Flash point	< -20 °C.
Auto-ignition temperature	> 200 °C.
Decomposition temperature	Not determined.
pH	Not applicable.
Kinematic viscosity	Not applicable.
Solubility (at 20 °C)	Practically insoluble.
Solubility in other solvents	Not determined.
Partition coefficient n-octanol/water	Not determined.
Vapour pressure	Not determined.
Density and/or relative density (at 20 °C)	0.7 g/cm ³ (calculated).
Relative vapour density	Not determined.
Particle characteristics	Not applicable.
9.2	Other information
Explosive properties	Heating may cause an explosion. In use may form flammable/explosive vapour-air mixture.
Sustaining combustion	No data available.
Oxidizing properties	No data available.
Evaporation rate	No data available.
Solvent content	No data available.
Solid content	No data available.
10. Stability and reactivity	
10.1	Reactivity
Reactivity	Extremely flammable aerosol. Pressurized container: May burst if heated.
10.2	Chemical stability
Stability	The product is stable under storage at normal ambient temperatures.
10.3	Possibility of hazardous reactions
Hazardous reactions	No known hazardous reactions.
10.4	Conditions to avoid
Conditions to avoid	Keep away from sources of heat (e.g. hot surfaces), sparks and open flames. Vapours can form explosive mixtures with air.
10.5	Incompatible materials
Materials to avoid	No information available.

10.6 Hazardous decomposition products

Hazardous decomposition products No known hazardous decomposition products.

11. Toxicological information
11.1 Information on hazard classes as defined in Regulation (EC) no. 1272/2008

Acute toxicity Based on available data, the classification criteria are not met.

ATEmix calculated ATE (oral) > 2,000 mg/kg
ATE (dermal) > 2,000 mg/kg
ATE (inhalation vapour) > 20 mg/l
ATE (inhalation dust/mist) > 5 mg/l

Cas no	Name of substance	Route of exposure	Dosage	Species	Source	Method
64-17-5	Ethanol; ethyl alcohol	Oral	LD50: 6,200 mg/kg	Rat	IUCLID	
		Inhalation (4 h) vapour	LC50: 95.6 mg/l	Rat	RTECS	
8042-47-5	White mineral oil (petroleum)	Oral	LD50: > 5,000 mg/kg	Rat	OECD Guideline 401	
		Dermal	LD50: >2,000 mg/kg	Rabbit	OECD Guideline 402	
		Inhalation (4 h) vapour	LC50: >5,000 mg/l	Rat	OECD 403	
1314-13-2	Zinc oxide	Oral	LD50: >5,000 mg/kg	Mouse	Nanotoxicology, 6(7):746-56 (2012)	OECD Guideline 423
		Dermal	LD50: >2,000 mg/kg	Rat	Study report (2010)	OECD Guideline 402
-	Hydrocarbons, C6-C7, isoalkanes, cyclic, <5% n-hexane	Oral	LD50: >5,000 mg/kg	Rat	OECD 401	
		Inhalation (4 h) vapour	LC50: 73,860 mg/l	Rat	Publication (1970)	OECD Guideline 403
67-63-0	Propan-2-ol; isopropyl alcohol; isopropanol	Oral	LD50: 5,840 mg/kg	Rat		OECD 401
		Dermal	LD50: 13,900 mg/kg	Rabbit		OECD 402
97-59-6	Allantoin	Oral	LD50: >5,000 mg/kg	Rat	Study report (1985)	EU Method B.1
		Dermal	LD50: >5,000 mg/kg	Rat		

Skin corrosion/irritation Based on available data, the classification criteria are not met.

Serious eye damage/irritation Causes serious eye irritation.

Respiratory or skin sensitisation Based on available data, the classification criteria are not met.

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

Carcinogenicity Based on available data, the classification criteria are not met.

Reproductive toxicity Based on available data, the classification criteria are not met.

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

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

Aspiration hazard May be fatal if swallowed and enters airways.

11.2 Information on other hazards

Endocrine disrupting properties	This product does not contain a substance that has endocrine disrupting properties with respect to humans as no components meets the criteria.
Other hazards	The mixture is classified as hazardous according to regulation (EC) No 1272/2008 [CLP].

12. Ecological information

12.1 Toxicity

Ecotoxicity
Toxic to aquatic life with long lasting effects.

Cas no	Name of substance	Aquatic toxicity	Dose	h/d	Species	Source	Method
64-17-5	Ethanol; ethyl alcohol	Acute crustacea toxicity	EC50: 9,268 – 14,221 mg/l	48 h	Daphnia magna	IUCLID	
8042-47-5	White mineral oil (petroleum)	Acute fish toxicity	LC50: > 100 mg/l	96 h	Oncorhynchus mykiss	OECD Guideline 203	
		Acute algae toxicity	ErC50: 100 mg/l	72 h	Pseudokirchneriella subcapitata		
		Acute crustacea toxicity	EC50: > 100 mg/l	48 h	Daphnia magna (Big water flea)		
1314-13-2	Zinc oxide	Acute fish toxicity	LC50: 1.793 mg/l	96 h	Danio rerio	Journal of Environmental Science and Health	The zebrafish 96-h embryo-larval bioassay
		Acute algae toxicity	ErC50: 3.35 mg/l	72 h	Desmodesmus subspicatus	REACH Registration Dossier	OECD Guideline 201
		Acute crustacea toxicity	EC50: > 1.7 - < 9 mg/l	48 h		REACH Registration Dossier	OECD Guideline 202
		Fish toxicity	NOEC: >= 0.54 mg/l	32 d	Danio rerio	REACH Registration Dossier	OECD Guideline 210
		Algae toxicity	NOEC: 0.08 mg/l	4 d	Dunaliella tertiolecta	Science of the Total Environment 445-446	Anders: IRSA-CNR
		Crustacea toxicity	NOEC: > 78.9 mg/l	21 d		REACH Registration Dossier	OECD Guideline 211
		Acute bacteria toxicity	EC50: 5.2 mg/l	3 h	Activated sludge of a predominantly domestic sewage	Water research volume 17, nr10, 1363-136	OECD Guideline 209
-	Hydrocarbons, C6-C7, isoalkanes, cyclic, <5% n-hexane	Acute fish toxicity	LL50: 12 mg/l	96 h	Oncorhynchus mykiss	Study report (1994)	
		Acute algae toxicity	ErC50: 7.276 mg/l	72 h	Raphidocelis subcapitata	Company report (2009)	
		Acute crustacea toxicity	EL50: 17.06 mg/l	48 h		Company report (2009)	
		Fish toxicity	NOEC: 2.187 mg/l	28 d	Oncorhynchus mykiss	Company report (2009)	
		Crustacea toxicity	NOEC: 3.818 mg/l	21 d		Company report (2009)	

67-63-0	Propan-2-ol; isopropyl alcohol; isopropanol	Acute fish toxicity	LC50: 10,000 mg/l	96 h		REACH Registration Dossier	OECD Guideline 203
		Acute algae toxicity	ErC50: >100 mg/l	72 h	Scenedesmus subspicatus		
		Acute crustacea toxicity	EL50: 9,714 mg/l	48 h	Daphnia magna (Big water flea)		OECD 202
		Fish toxicity	NOEC: > 1,000 mg/l	28 d	Danio rerio	REACH Registration Dossier	Other: REACH Guidance on QSARs R.6
		Crustacea toxicity	NOEC: > 1,000 mg/l	21 d		REACH Registration Dossier	Anders: REACH Guidance on QSARs R.6
		Acute bacteria toxicity	EC50: >100 mg/l				
97-59-6	Allantoin	Acute fish toxicity	LC50: >5,000 mg/l	96 h	Danio rerio (zebrafish)		
		Acute algae toxicity	ErC50: >100 mg/l	72 h	Desmodesmus subspicatus		
		Acute crustacea toxicity	EC50: >100 mg/l	48 h	Daphnia magna (Big water flea)		
		Acute bacteria toxicity	EC50: >10 mg/l	3 h	Pseudomonas putida	IRCHA	

12.2 Persistence and degradability

Persistence and degradability
The product has not been tested.

Cas no	Name of substance	Method	Days	Value	Assessment
-	Hydrocarbons, C6-C7, isoalkanes, cyclic, <5% n- hexane	Biodegradation	28 d	98%	Readily biodegradable (according to OECD criteria).
67-63-0	Propan-2-ol; isopropyl alcohol; isopropanol	Biodegradation	21 d	95%	Readily biodegradable (according to OECD criteria).
97-59-6	Allantoin	OECD 301B/ ISO 9439/ EEC 92/69/V, C.4-C	29 d	76	Readily biodegradable (according to OECD criteria).

12.3 Bioaccumulative potential

Bioaccumulation
The product has not been tested.

Partition coefficient n-octanol/water		
Cas no	Name of substance	Log Pow
106-97-8	Butane	2.89
64-17-5	Ethanol; ethyl alcohol	-0.31

74-98-6	Propane	2.36
	Hydrocarbons, C6-C7, isoalkanes, cyclic, <5% n-hexane	3.6
67-63-0	Propan-2-ol; isopropyl alcohol; isopropanol	0.05
97-59-6	Allantoin	-2.26

BCF				
Cas no	Name of substance	BCF	Species	Source
1314-13-2	Zinc oxide	1,050	Oncorhynchus mykiss	REACH Registration Dossier
	Hydrocarbons, C6-C7, isoalkanes, cyclic, <5% n-hexane	>= 35.8		REACH Registration Dossier
67-63-0	Propan-2-ol; isopropyl alcohol; isopropanol	0.994		Meylan,WM, Howard,PH

12.4	<u>Mobility in soil</u>
Mobility	No information available.
12.5	<u>Results of PBT and vPvB assessment</u>
Assessment	The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.
12.6	<u>Endocrine disrupting properties</u>
Endocrine disrupting potential	This product does not contain a substance that has endocrine disrupting properties with respect to non-target organisms as no components meets the criteria.
12.7	<u>Other adverse effects</u>
Other adverse effects	No information available.
Further information	Do not allow to enter into surface water or drains. Do not allow to enter into soil/subsoil.

13. Disposal considerations	
13.1	<u>Waste treatment methods</u>
Waste from residues / unused products	Do not allow to enter into surface water or drains. Do not allow to enter into soil/subsoil. Dispose of waste according to applicable legislation.
European list of waste products	*160504 WASTES NOT OTHERWISE SPECIFIED IN THE LIST; gases in pressure containers and discarded chemicals; gases in pressure containers (including halons) containing hazardous substances; hazardous waste.
Removal of contaminated packaging	Non-contaminated packages may be recycled. Handle contaminated packages in the same way as the substance itself.

14. Transport information		
Transport by road, by rail and inland waterway transport (ADR/RID/ADN)	14.1 UN-number: 14.2 UN proper shipping name: 14.3 Transport hazard class(es): 14.4 Packing group:	UN 1950 AEROSOLS 2 - Hazard label: 2.1  Classification code: 5F Special provisions: 190, 327, 344, 625 Excepted quantity: E0 Limited quantity (LQ): 1 L Transport category: 2 Tunnel restriction code: D

MSDS

Material Safety Data Sheet

Marine transport (IMDG)		<u>14.1 UN-number:</u> <u>14.2 UN proper shipping name:</u> <u>14.3 Transport hazard class(es):</u> <u>14.4 Packing group:</u>	UN 1950 AEROSOLS 2.1 - Hazard label: 2.1  Special provisions: 63, 190, 277, 327, 344, 381, 959 Excepted quantity: E0 Limited quantity (LQ): 1 L EmS: F-D, S-U
Air transport (ICAO-IATA)		<u>14.1 UN-number:</u> <u>14.2 UN proper shipping name:</u> <u>14.3 Transport hazard class(es):</u> <u>14.4 Packing group:</u>	UN 1950 AEROSOLS, FLAMMABLE 2.1 - Hazard label: 2.1  Special provisions: A145, A167, A802 Limited quantity Passenger:30 kg G Passenger LQ: Y203 Excepted quantity: E0 IATA-packing instructions - Passenger: 203 IATA-max. quantity - Passenger: 75 kg IATA-packing instructions - Cargo: 203 IATA-max. quantity - Cargo: 150 kg
14.5	<u>Environmental hazards</u>		
Environmental hazard		Yes.	
Marine pollutant		No information available.	
Danger releasing substance		Zinc oxide.	
14.6	<u>Special precautions for user</u>		
Warning: Flammable gases.			
14.7	<u>Maritime transport in bulk according to IMO instruments</u>		
Not applicable.			
15. Regulatory information			
15.1	<u>Safety, health and environmental regulations/legislation specific for the substance or mixture</u>		
Relevant EU rule(s)		<u>Restrictions on use (REACH, annex XVII):</u> Entry 3, Entry 28, Entry 40 <u>Directive 2010/75/EU on industrial emissions:</u> 73.818 % (516.726 g/l) <u>Directive 2004/42/EC on VOC in paints and varnishes:</u> 73.818 % (516.726 g/l) <u>Information according to Directive 2012/18/EU (SEVESO III):</u> P3a FLAMMABLE AEROSOLS <u>Additional information:</u> E2	

	Additional information To follow: 850/2004/EC, 1107/2009/EC, 649/2012/EC Aerosol Directive (75/324/EEC).										
National regulations	<u>Employment restrictions:</u> Observe restrictions to employment for juveniles according to the 'juvenile work protection guideline' (94/33/EC). <u>Water hazard class (D):</u> 2 - obviously hazardous to water										
15.2	<u>Chemical safety assessment</u>										
Chemical safety assessments for substances in this mixture were not carried out.											
16. Other information											
Indication of changes (revised safety data sheet)	Alignment to regulation. Regulation (EC) No. 1907/2006 (REACH), amended by 2020/878/EU. Restructuring and revising sections 1 to 15.										
Sources of used key data	This information is based on the currently available information (Producer(s)). See also the website: https://echa.europa.eu/information-on-chemicals/registered-substances										
(EU)H-statement(s)	H220 Extremely flammable gas. H222 Extremely flammable aerosol. H225 Highly flammable liquid and vapour. H229 Pressurised container: May burst if heated. H280 Contains gas under pressure; may explode if heated. H304 May be fatal if swallowed and enters airways. H319 Causes serious eye irritation. H336 May cause drowsiness or dizziness. H400 Very toxic to aquatic life. H410 Very toxic to aquatic life with long lasting effects. H411 Toxic to aquatic life with long lasting effects. EUH066 Repeated exposure may cause skin dryness or cracking.										
Classification procedure	<table border="1"> <thead> <tr> <th>Classification</th><th>Classification procedure</th></tr> </thead> <tbody> <tr> <td>Aerosol 1: H222; H229</td><td>On basis of test data</td></tr> <tr> <td>Asp. Tox. 1: H304</td><td>Calculation method</td></tr> <tr> <td>Eye Irrit. 2: H319</td><td>Bridging principle "Aerosols"</td></tr> <tr> <td>Aquatic Chronic 2: H411</td><td>Calculation method</td></tr> </tbody> </table>	Classification	Classification procedure	Aerosol 1: H222; H229	On basis of test data	Asp. Tox. 1: H304	Calculation method	Eye Irrit. 2: H319	Bridging principle "Aerosols"	Aquatic Chronic 2: H411	Calculation method
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Aquatic Chronic 2: H411	Calculation method										
List of abbreviations and acronyms	ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways. ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road. ADR/RID/ADN: Agreements concerning the International Carriage of Dangerous Goods by Road/Rail/Inland Waterways. Aquatic Acute: Hazardous to the aquatic environment – acute hazard. Aquatic Chronic: Hazardous to the aquatic environment – chronic hazard. Asp. Tox.: Aspiration hazard. ATE: Acute toxicity estimate. BCF: Bio-concentration factor. BW: Body weight. CAS: Chemical Abstracts Service. CLP: Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008. DGR: Dangerous Goods Regulations. DNEL: Derived No Effect Level. DMEL: Derived Minimal Effect Level.										

	EC50: Effective Concentration 50%. EC-No.: The EC Inventory (EINECS, ELINCS and the NLP-list) is the source for the seven-digit EC number, an identifier of substances commercially available within the EU (European Union). EINECS: European Inventory of Existing Commercial Chemical Substances. ELINCS: European List of Notified Chemical Substances. Eye Irrit.: Serious eye irritation. Flam. Gas : Flammable gases. Flam. Liq.: Flammable liquid. GHS: Globally Harmonized System of Classification and Labelling of Chemicals. IATA: International Air Transport Association (provisions concerning the international carriage of dangerous goods by air). IATA/DGR: Dangerous Goods Regulations (DGR) for the air transport (IATA). ICAO: International Civil Aviation Organization. ICAO-TI: Technical instructions for the safe transport of dangerous goods by air. IMDG: International Maritime Dangerous Goods Code. LC50: Lethal Concentration to 50 % of a test population. LD50: Lethal Dose to 50% of a test population. LL50: Lethal loading rate resulting in 50% mortality. Log POW: n-Octanol/water. M-factor: Multiplication factor. NOEC: No Observed Effect Concentration. OECD: Organisation for Economic Co-operation and Development. PBT: Persistent, Bioaccumulative and Toxic substance. PNEC: Predicted No Effect Concentration. REACH: Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006. RID: Regulations concerning the International Carriage of Dangerous Goods by Rail. SCL: Specific concentration limit. STOT SE: Specific target organ toxicity —single exposure. SVHC: Substances of Very High Concern. vPvB: Very Persistent and Very Bioaccumulative.
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This information is to our knowledge correct and complete on the date of issue of this safety data sheet. The information only concerns the product and does not give any guarantee for the quality and the completeness of the properties of the product, or in case of mixing or using in any other process. It remains the responsibility of the user to assure himself that the information is suitable and complete concerning the special use he makes of the product.

Hofman Animal Care B.V. denies all responsibility for loss or damage resulting from the use of these data.

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