



MSDS

Material Safety Data Sheet

MSDS MATERIAL SAFETY DATA SHEET		0.1 Product	<i>Perfect Zinksulfaat</i>
		0.2 Status	Active
		0.3 Version	12
		0.4 Version date	06-03-2025
1. Identification of the product and of the company			
1.1	<u>Product identification</u>		
Product name		<i>Perfect Zinksulfaat</i>	
Trade name		<i>Perfect Zinksulfaat / Perfect Zinc sulphate / Perfect Zinksulfat / Perfect Sulfate de zinc</i>	
Article code		PERF0025	
Chemical description		Substance (Zinc sulphate heptahydrate)	
UFI		-	
REACH registration number		01-2119474684-27-0000	
1.2	<u>Relevant identified uses of the substance or mixture and uses advised against</u>		
Identified use(s)		Chemical basic material, for industrial purposes only.	
Use(s) advised against		Not identified.	
1.3	<u>Details of the supplier of the safety data sheet</u>		
Company identification		Name	Hofman Animal Care B.V.
Contact		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.nl
1.4	<u>Emergency telephone number</u>		
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 cases of acute intoxications)	



2. Hazards identification											
2.1	<u>Classification of the substance or mixture</u> Classification according to Regulation (EC) no. 1272/2008: Acute Tox. 4; Acute toxicity (oral), category 4; H302 Eye Dam. 1; Serious eye damage, category 1; H318 Aquatic Acute 1; Hazardous to the aquatic environment (acute), category 1; H400 Aquatic Chronic 1; Hazardous to the aquatic environment (chronic); category 1; H410 The full text of the (EU)H-statements can be found in section 16.										
2.2	<u>Label elements</u> Labelling according to Regulation (EC) no. 1272/2008: <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 35%;">Hazardous component(s)</td><td style="text-align: center;">-</td></tr> <tr> <td>Hazard pictogram(s)</td><td style="text-align: center;"> </td></tr> <tr> <td>Signal word</td><td style="text-align: center;">Danger</td></tr> <tr> <td>Hazard statements</td><td> H302 Harmful if swallowed. H318 Causes serious eye damage. H410 Very toxic to aquatic life with long lasting effects. </td></tr> <tr> <td> Precautionary measures - Prevention - Response </td><td> P264 Wash hands thoroughly after handling. P273 Avoid release to the environment. P280 Wear protective gloves/protective clothing/eye protection/face protection. P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P310 Immediately call a POISON CENTER/doctor. P330 Rinse mouth. </td></tr> </table>	Hazardous component(s)	-	Hazard pictogram(s)		Signal word	Danger	Hazard statements	H302 Harmful if swallowed. H318 Causes serious eye damage. H410 Very toxic to aquatic life with long lasting effects.	Precautionary measures - Prevention - Response	P264 Wash hands thoroughly after handling. P273 Avoid release to the environment. P280 Wear protective gloves/protective clothing/eye protection/face protection. P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P310 Immediately call a POISON CENTER/doctor. P330 Rinse mouth.
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2.3	<u>Other hazards</u> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 35%;">Results of PBT and vPvB assessment</td><td>This substance does not meet the PBT/vPvB criteria of REACH, Annex XIII.</td></tr> <tr> <td>Endocrine disrupting properties</td><td>The product does not contain any substance that has endocrine-disrupting properties with respect to non-target organisms.</td></tr> <tr> <td>Other hazards</td><td>No risks worthy of mention.</td></tr> </table>	Results of PBT and vPvB assessment	This substance does not meet the PBT/vPvB criteria of REACH, Annex XIII.	Endocrine disrupting properties	The product does not contain any substance that has endocrine-disrupting properties with respect to non-target organisms.	Other hazards	No risks worthy of mention.				
Results of PBT and vPvB assessment	This substance does not meet the PBT/vPvB criteria of REACH, Annex XIII.										
Endocrine disrupting properties	The product does not contain any substance that has endocrine-disrupting properties with respect to non-target organisms.										
Other hazards	No risks worthy of mention.										



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3. Composition/information on ingredients

3.1	<u>Substances</u>	Zn SO ₄ * (H ₂ O) ₆			
Name component(s)	CAS no.	EINECS no.	Index no.	Reach no.	Classification
Zinc sulphate heptahydrate	7446-20-0	231-793-3	030-006-00-9	01-2119474684-27-0000	Acute Tox. 4; H302 Eye Dam. 1; H318 Aquatic Acute 1; H400 Aquatic Chronic 1; H410

The full text of the (EU)H-statements can be found in section 16.

Specific concentration limit, M-factor, acute toxicity estimation

Name component(s)	CAS no.	SCL, M-factor, ATE
Zinc sulphate heptahydrate	7446-20-0	Aquatic Acute 1: M = 1 Aquatic Chronic 1: M = 1

The full text of the (EU)H-statements can be found in section 16.

3.2	<u>Mixtures</u>	Not relevant (substance).
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4. First aid measures

4.1	<u>Description of first aid measures</u>
General	There is no information available.
First aid measures in case of inhalation	Move victim to fresh air. Care for immobility and protect against heat loss. In case of irregular breathing or respiratory arrest provide artificial respiration.
First aid measures in case of skin contact	Remove contaminated, soaked clothing immediately and remove safely. Wash sore areas with water. In case of persistent skin irritation, consult doctor.
First aid measures in case of eye contact	Immediately flush eyes with plenty of flowing water for 10 to 15 minutes holding eyelids apart. Immediately consult an ophthalmologist.
First aid measures in case of ingestion	Immediately rinse mouth and drink plenty of water. Induce vomiting; if patient is conscious, arrange for medical attention. If swallowed, seek medical attention immediately and show container or label.

4.2	<u>Most important symptoms and effects, both acute and delayed</u>
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No information available.

4.3	<u>Indication of any immediate medical attention and special treatment needed</u>
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No information available.

5. Firefighting measures

5.1	<u>Extinguishing media</u>
Suitable extinguishing media	Carbon dioxide, Extinguishing powder, Water spray jet, Alcohol-resistant foam. Match extinguishing measures to ambient fire
Unsuitable extinguishing media	Full water jet.

5.2	<u>Special hazards arising from the substance or mixture</u>
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Special exposure hazards		Fire may release: Sulphur oxides; Zinc oxide.
5.3	<u>Advice for firefighters</u>	
Special protective equipment		Wear self-contained breathing apparatus. Wear suitable protective clothing.
Special procedures		Collect contaminated firefighting water separately, do not allow it to enter the sewage system.
6. Accidental release measures		
6.1	<u>Personal precautions, protective equipment and emergency procedures</u>	
Personal precautions		Use personal protective clothing. Ensure adequate ventilation. Avoid contact with eyes, skin and clothing. Use respiratory protection in case of development of fumes/dust/aerosol. Avoid formation of dust. Do not inhale dust. Keep unprotected persons away.
6.2	<u>Environmental precautions</u>	
Environmental precautions		Do not release into drains or the aquatic environment. Do not allow to enter subsoil/soil. In case of penetration into surface water or sewage system, warn the relevant authorities. In case of penetration into soil, warn the relevant authorities.
6.3	<u>Methods and material for containment and cleaning up</u>	
Methods for cleaning up		Absorb mechanically. Flush away residues with water. Avoid dust formation.
6.4	<u>Reference to other sections</u>	
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		Keep in tightly closed container. Handle and open container with care. Avoid dust formation. Ensure good ventilation.
7.2	<u>Conditions for safe storage, including any incompatibilities</u>	
Storage		Keep container tightly closed. Storage class: 13 = non-combustible solid (Germany).
Protection against fire and explosion		There is no information available.
Packaging material		There is no information available.
Unsuitable packaging material		There is no information available.
7.3	<u>Specific end use(s)</u>	
There is no information available.		
8. Exposure controls/personal protection		
8.1	<u>Control parameters</u>	
Occupational exposure limits		Contains no substances with occupational exposure limit values.



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Biological limit values

There is no information available.



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DNELs

Relevant DNELs of components						
Name of agent	Cas no	End-point	Threshold level	Exposure pattern	Used in	Zn soluble?
Zinc sulphate heptahydrate	7446-20-0	DNEL	0.83 mg Zn/kg BW/d	Oral	Workers and consumers	Soluble
		DNEL	0.83 mg Zn/kg BW/d	Oral	Workers and consumers	Insoluble
		DNEL	8.3 mg Zn/kg BW/d	Dermal	Workers and consumers	Soluble
		DNEL	8.3 mg Zn/kg BW/d	Dermal	Workers and consumers	Insoluble
		DNEL	1 mg Zn/m ³	Inhalative	Workers	Soluble
		DNEL	5 mg Zn/m ³	Inhalative	Workers	Insoluble
		DNEL	1.3 mg Zn/m ³	Inhalative	Consumers	Soluble
		DNEL	2.5 mg Zn/m ³	Inhalative	Consumers	Insoluble

PNECs

Relevant PNECs of components				
Name of agent	Cas no	End-point	Threshold level	Environmental compartment
Zinc sulphate heptahydrate	7446-20-0	PNEC	20.6 µg Zn/L	Fresh water
		PNEC	6.1 µg Zn/L	Marine water
		PNEC	235.6 mg Zn/kg dry weight	Freshwater sediments
		PNEC	113 mg Zn/kg dry weight	Marine sediments
		PNEC	106.8 mg Zn/kg dry weight	Soil
		PNEC	52 µg Zn/L	Sewage treatment

8.2 Exposure controls

Engineering measures	Remove contaminated clothing immediately. Avoid contact with eyes and skin. Keep away from foodstuffs and feedingstuffs. Do not eat, drink, smoke, sniff while working. Wash hands before breaks and after work. Do not inhale dust.
Personal protection equipment	
Eye / face protection	Tightly sealed goggles according to BS EN ISO 16321-1:2022.
Skin / body protection	Wear the protective work clothing commonly used in chemical companies.
Hand protection	Impermeable gloves Suitable material: Chloroprene Thickness of gloves: >= 0.6 mm Penetration time: >= 480 min. Observe glove manufacturer's instructions concerning penetrability and breakthrough time.
Respiratory protection	In case of insufficient ventilation, wear suitable respiratory protection. Self-contained respiratory protection device with particulates filter P2 according to EN 143.
Thermal hazards	There is no information available.
Environmental exposure controls	See section 6.2; Environmental precautions.
General protection and hygiene measures	When using do not eat, drink or smoke. Wash hands before breaks and after work.



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9. Physical and chemical properties		
9.1	Information on basic physical and chemical properties	
Physical state		Solid, crystalline powder.
Colour		White.
Odour		Odourless.
Odour threshold		Not available.
Melting / freezing point		196 °C.
Boiling point / range (1013 hPa)		Not available.
Flammability		Does not ignite.
Explosion limits		Lower explosion limit: not applicable. Upper explosion limit: not applicable.
Flash point		Not applicable.
Auto-ignition temperature		Not applicable.
Decomposition temperature		Not applicable.
pH		4 to 6
Kinematic viscosity		Not applicable.
Solubility in water		350 g/l.
Partition coefficient n-octanol/water		Bioaccumulation is not expected.
Vapour pressure		Not applicable.
Density or relative density		1,98 g/cm³.
Relative vapour density		Not applicable.
Particle characteristics		Not applicable.
9.2	Other information	
Explosive properties		The product is not explosive.
Oxidizing characteristics		Not applicable.
Bulk density		1957 kg/m³.
Evaporation rate		Not available.
Other information		Molar mass: 287.6 g/mol.
10. Stability and reactivity		
10.1	Reactivity	
Reactivity		No information available.



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10.2	<u>Chemical stability</u>			
Stability		Product is stable under normal storage conditions and use.		
10.3	<u>Possibility of hazardous reactions</u>			
Hazardous reactions		The concentration of particulate matter can lead to dust explosion hazards if air is present.		
10.4	<u>Conditions to avoid</u>			
Conditions to avoid		Protect from excessive heat and direct sunlight.		
10.5	<u>Incompatible materials</u>			
Materials to avoid		Strong oxidising agents; alkalis (caustics).		
10.6	<u>Hazardous decomposition products</u>			
Hazardous decomposition products		Sulphur oxides (SO _x), zinc oxide.		
11. Toxicological information				
11.1	<u>Information on hazard classes as defined in Regulation (EC) No. 1272/2008</u>			
Acute toxicity				
Cas no.	Name of substance	Route of exposure	Dosis	Species
7446-20-0	Zinc sulphate heptahydrate	Oral	LD50 = 920 – 4,725 mg/kg	Rat
		Dermal	LD50 = >2,000 mg/kg	Rat
Acute toxicity: oral		Acute Tox. 4; H302 = Harmful if swallowed.		
Acute toxicity: dermal		Based on available data, the classification criteria are not met.		
Acute toxicity: inhalative		Based on available data, the classification criteria are not met.		
Skin corrosion / irritation		Based on available data, the classification criteria are not met.		
Serious eye damage / irritation		Eye Dam. 1; H318 = Causes serious eye damage.		
Respiratory or skin sensitisation		No known sensitisation effect.		
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.		
Effects on or via lactation		Based on available data, the classification criteria are not met.		
Specific target organ toxicity – single exposure		Not applicable.		
Specific target organ toxicity – repeated exposure		Not applicable.		
Aspiration hazard		No information available.		
11.2	<u>Information on other hazards</u>			



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Symptoms	Inhalation of vapours may cause irritation of airways and mucous membranes, headache, nausea, dizziness, vomiting.
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12. Ecological information

12.1 Toxicity

Aquatic toxicity

Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Cas no.	Name of substance	pH	Dose	h/d	Species	Source
7446-20-0	Zinc sulphate heptahydrate	< 7	EC50 = 1.82 mg Zn/L	48 h	Ceriodaphnia dubia	US EPA 821-R-02 - 012
		> 7	EC50 = 0.6 mg Zn/L	72 h	Selenastrum capricornutum	OECD 201

12.2 Persistence and degradability

Persistence and degradability	No information available.
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12.3 Bioaccumulation

Bioaccumulation	Bioaccumulation is not to be expected.
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Partition coefficient n-octanol/water	No information available.
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12.4 Mobility in soil

Mobility	No information available.
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12.5 Results of PBT and vPvB assessment

Evaluation	This substance does not meet the PBT/vPvB criteria of REACH, Annex XIII.
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12.5 Endocrine disrupting properties

Endocrine disrupting potential	The product does not contain any substance that has endocrine-disrupting properties with respect to non-target organisms.
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12.6 Other adverse effects

General information	Very toxic to aquatic organisms; may cause long-term adverse effects in the aquatic environment. Do not allow to enter into ground-water, surface water or drains. Danger to drinking water.
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13. Disposal considerations

13.1 Waste treatment methods

Product disposal	Incinerate according to applicable local, state and federal regulations.
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European list of waste products	06 03 13* = Solid salts and solutions containing heavy metals * = Evidence for disposal must be provided.
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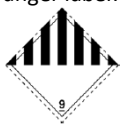
Removal of contaminated packaging	Dispose of waste according to applicable legislation.
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Additional information	Discharge into the environment must be avoided.
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14. Transport information

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Transport per road, rail or inland waterways (ADR/RID/ADN)	14.1 UN-number: 14.2 UN proper shipping name: 14.3 Transport hazard class(es): 14.4 Packing group:	UN 3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc sulphate) 9 III Danger label: 9   Classification code: M7 Hazard identification (Kemmler): 90 Special provisions: 274, 335, 375, 601 Limited quantities (LQ): 5 kg Excepted quantities: E1 Transport category: 3 Package - Instructions: P002 IBC08 LP02 R001 Package - Special Provisions: PP12 B3 Special provisions for packing together: MP10 Portable tanks - Instructions: T1 BK1 BK2 BK3 Portable tanks - Special Provisions: TP33 Tank coding: SGAV LGBV Tunnel restriction code: - Transport permitted: T Equipment necessary: PP
Transport per marine ship (IMDG)	14.1 UN-number: 14.2 UN proper shipping name: 14.3 Transport hazard class(es): 14.4 Packing group:	UN 03077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc sulphate) 9 III Danger label: 9   Special provisions: 274, 335, 966, 967, 969 Limited quantities (LQ): 5 kg Excepted quantities: E1 EmS: F-A, S-F Package - Instructions: P002, LP02 Package - Provisions: PP12 IBC - Instructions: IBC08 IBC - Provisions: B3 Tank instructions - IMO: - Tank instructions - UN: T1, BK2, BK2, BK3 Tank instructions - Provisions: TP33 Stowage category: A – SW23 Properties and observations: - Segregation group: none

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Transport by air (ICAO-IATA)		14.1 UN-number: 14.2 UN proper shipping name: 14.3 Transport hazard class(es): 14.4 Packing group:	UN 3077 Environmentally hazardous substance, solid, n.o.s. (Zinc sulphate) 9 III Danger label: Miscellaneous & Environmentally hazardous  Excepted Quantity Code: E1 Passenger and Cargo Aircraft: Ltd.Qty.: Pack.Instr. Y956 - Max. Net Qty/Pkg. 30 kg G Passenger and Cargo Aircraft: Pack.Instr. 956 - Max. Net Qty/Pkg. 400 kg Cargo Aircraft only: Pack.Instr. 956 - Max. Net Qty/Pkg. 400 kg Special Provisions: A97 A158 A179 A197 A215 Emergency Response Guide-Code (ERG): 9L
14.5	<u>Environmental hazards</u>		
Environmentally hazard		Substance/mixture is environmentally hazardous according to the criteria of the UN model regulations.	
Marine pollutant		IMDG: yes. AND: yes.	
14.6	<u>Special precautions for user</u>		
No further relevant information available.			
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)		No information available.	
National regulations		<i>Categories of accidents in accordance with 2012/18/EU</i> Directive 2012/18/EU on the control of major-accident hazards involving dangerous substances [Seveso III Directive]. Environmental hazards: Code E1, Quantity threshold 100 000 kg / 200 000 kg. <i>VOC content according to Directive 2010/75/EU</i> VOC (EC): 0 %. <i>Further information:</i> The product does not contain constituents according to: candidate list for inclusion in Annex XIV of Regulation (EC) No 1907/2006 (REACH)	
15.2	<u>Chemical Safety Assessment</u>		
For this substance a chemical safety assessment has been carried out.			



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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)	H302 Harmful if swallowed. H318 Causes serious eye damage. H400 Very toxic to aquatic life. H410 Very toxic to aquatic life with long lasting effects.
Classification procedure	There is no information available.
List of abbreviations and acronyms	Acute Tox.: Acute Toxicity. 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. ATE: Acute toxicity estimate. BCF: Bio-concentration factor. BW: Bodyweight. 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. 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). EC50: Median Effective Concentration. EINECS: European Inventory of Existing Commercial Chemical Substances. ELINCS: European List of Notified Chemical Substances. Eye Dam: Serious eye damage. 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. Kp: Partition coefficient. LD50: Lethal Dose to 50% of a test population. M-factor: Multiplication factor. 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. vPvB: Very Persistent and Very Bioaccumulative. Zn: Zinc.



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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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