SAFETY DATA SHEET

NOVAGUARD 840/890 HARDENER CREAM



Date of issue 11 August 2021

Version 1.03

1. Product and company identification

Product name : NOVAGUARD 840/890 HARDENER CREAM

Product code : 00445129
Product type : Liquid.

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

Product use : Professional applications, Used by spraying.

Use of the substance/

mixture

: Coating.

Uses advised against : Not applicable.

Supplier's details : PPG PMC Japan Co., Ltd.

8F, Shintetsu Bldg., 1-1, Daikaidori 1-chome, Kobe 652-0803

Tel: +81 78 574 2777 Fax: +81 78 576 0035

Emergency telephone

number

: 078 574 2777

2. Hazards identification

GHS Classification : ACUTE TOXICITY (oral) - Category 4

ACUTE TOXICITY (dermal) - Category 3 ACUTE TOXICITY (inhalation) - Category 1 SKIN CORROSION - Category 1A

SERIOUS EYE DAMAGE - Category 1 SKIN SENSITIZATION - Category 1

SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) - Category 1 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 1

AQUATIC HAZARD (ACUTE) - Category 2 AQUATIC HAZARD (LONG-TERM) - Category 2

GHS label elements

Hazard pictograms :









Signal word : Danger

Hazard statements : Harmful if swallowed.

Toxic in contact with skin.

Causes severe skin burns and eye damage.

May cause an allergic skin reaction.

Fatal if inhaled.

Causes damage to organs. (central nervous system (CNS), heart, kidneys, nervous

system, respiratory system)

Causes damage to organs through prolonged or repeated exposure. (adrenal, blood

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2. Hazards identification

system, central nervous system (CNS), heart, kidneys, liver, respiratory system) Toxic to aquatic life with long lasting effects.

Precautionary statements

Prevention

: Wear protective gloves, protective clothing and eye or face protection. In case of inadequate ventilation wear respiratory protection. Use only outdoors or in a wellventilated area. Avoid release to the environment. Do not breathe vapor. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace.

Response

: Collect spillage. IF exposed or concerned: Call a POISON CENTER or doctor. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or doctor. IF SWALLOWED: Immediately call a POISON CENTER or doctor. Rinse mouth. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. Immediately call a POISON CENTER or doctor. Wash contaminated clothing before reuse. IF ON SKIN: Call a POISON CENTER or doctor if you feel unwell. Wash with plenty of water. If skin irritation or rash occurs: Get medical advice or attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor.

Storage

: Store locked up.

Disposal

: Dispose of contents and container in accordance with all local, regional, national and international regulations.

Other hazards which do not : None known.

result in classification

3. Composition/information on ingredients

Substance/mixture Mixture

CAS number/other identifiers

CAS number : Not applicable. **CSCL** number : Not available.

Ingredient name	%	CAS number	CSCL
benzyl alcohol	50 - 100 12.5 - <15 3 - <5 1 - <2	6864-37-5 100-51-6 1760-24-3 90-72-2	4-102 3-1011 2-2059; 2-2083 3-714; 3-762; 3-776

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

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

SUB codes represent substances without registered CAS Numbers.

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4. First aid measures

Description of necessary first aid measures

Eye contact: Check for and remove any contact lenses. Immediately flush eyes with running

water for at least 15 minutes, keeping eyelids open. Seek immediate medical

attention.

Inhalation : Remove to fresh air. Keep person warm and at rest. If not breathing is

irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by

trained personnel.

Skin contact: Remove contaminated clothing and shoes. Wash skin thoroughly with soap and

water or use recognized skin cleanser. Do NOT use solvents or thinners.

Ingestion : If swallowed, seek medical advice immediately and show this container or label.

Keep person warm and at rest. Do NOT induce vomiting.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : Causes serious eye damage.

Inhalation : Fatal if inhaled.

Skin contact: Causes severe burns. Toxic in contact with skin. Causes damage to organs

following a single exposure in contact with skin. May cause an allergic skin reaction.

Ingestion : Harmful if swallowed. Causes damage to organs following a single exposure if

swallowed.

Over-exposure signs/symptoms

Eye contact: Adverse symptoms may include the following:

pain watering redness

Inhalation : No specific data.

Skin contact: Adverse symptoms may include the following:

pain or irritation

redness

blistering may occur

Ingestion: Adverse symptoms may include the following:

stomach pains

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : In case of inhalation of decomposition products in a fire, symptoms may be delayed.

The exposed person may need to be kept under medical surveillance for 48 hours.

Specific treatments: No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. If it

is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing

thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

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5. Fire-fighting measures

Extinguishing media

Suitable extinguishing

media

Unsuitable extinguishing

: Use an extinguishing agent suitable for the surrounding fire.

media

: None known.

Specific hazards arising from the chemical

: In a fire or if heated, a pressure increase will occur and the container may burst. This material is toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

Hazardous thermal decomposition products : Decomposition products may include the following materials:

carbon oxides nitrogen oxides metal oxide/oxides Formaldehyde.

Special protective actions for fire-fighters

: Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

: No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Do not breathe vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

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

Environmental precautions: Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities. Collect spillage.

Methods and materials for containment and cleaning up

Small spill

: Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill

: Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

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7. Handling and storage

Precautions for safe handling

: Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Avoid release to the environment. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Conditions for safe storage: Store between the following temperatures: 0 to 35°C (32 to 95°F). Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
benzyl alcohol	Japan Society for Occupational Health (Japan, 5/2020). Skin sensitizer. OEL-C: 25 mg/m³

procedures

Recommended monitoring: If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to appropriate monitoring standards. Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

Appropriate engineering controls

: Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Environmental exposure controls

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

Individual protection measures

Hygiene measures

: Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye protection **Skin protection**

: Chemical splash goggles and face shield.

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8. Exposure controls/personal protection

Hand protection

: Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Gloves

: nitrile neoprene

Body protection

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

Other skin protection

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

Respiratory protection

: Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. If workers are exposed to concentrations above the exposure limit, they must use appropriate, certified respirators. Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary.

9. Physical and chemical properties

Appearance

Physical state : Liquid.

Color : Colorless.

Odor : Amine-like.

Boiling point : >37.78°C (>100°F)

Flash point : Closed cup: Not applicable.

Relative density : 0.97 Bulk Density (g/cm³) : 0.96

Solubility : Insoluble in the following materials: cold water.

Viscosity : Not Applicable

10. Stability and reactivity

Reactivity

: No specific test data related to reactivity available for this product or its ingredients.

Chemical stability

: The product is stable.

Possibility of hazardous reactions

: Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid

: When exposed to high temperatures may produce hazardous decomposition products.

Incompatible materials

: Keep away from the following materials to prevent strong exothermic reactions: oxidizing agents, strong alkalis, strong acids.

Hazardous decomposition products

: Depending on conditions, decomposition products may include the following materials: carbon oxides nitrogen oxides Formaldehyde. metal oxide/oxides

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10. Stability and reactivity

11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
4,4'-methylenebis (2-methylcyclohexaneamine)	LC50 Inhalation Dusts and mists	Rat	420 mg/m³	4 hours
,	LD50 Dermal	Rabbit	>0.2 g/kg	-
	LD50 Oral	Rat	>0.32 g/kg	-
benzyl alcohol	LC50 Inhalation Dusts and mists	Rat	>4178 mg/m ³	4 hours
	LD50 Dermal	Rabbit	2000 mg/kg	-
	LD50 Oral	Rat	1.23 g/kg	-
N-(3-(trimethoxysilyl)propyl) ethylenediamine	LD50 Oral	Rat	2413 mg/kg	-
2,4,6-Tris (dimethylaminomethyl) phenol	LD50 Dermal	Rabbit	1.28 g/kg	-
prierioi	LD50 Dermal	Rat	1280 mg/kg	_
	LD50 Oral	Rat	1200 mg/kg	-

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
2,4,6-Tris (dimethylaminomethyl) phenol	Skin - Visible necrosis	Rabbit	-	4 hours	7 days

Sensitization

Product/ingredient name	Route of exposure	Species	Result
2,4,6-Tris (dimethylaminomethyl) phenol	skin	Guinea pig	Sensitizing

Mutagenicity

Not available.

Carcinogenicity

Not available.

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
4,4'-methylenebis(2-methylcyclohexaneamine) benzyl alcohol	Category 2 Category 1	-	heart, kidneys, nervous system, respiratory system central nervous system (CNS), kidneys
	Category 3		Narcotic effects

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11. Toxicological information

Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
4,4'-methylenebis(2-methylcyclohexaneamine)	Category 1 Category 2	-	kidneys adrenal, blood system, heart, liver, respiratory system
benzyl alcohol	Category 1	-	central nervous system (CNS)

Aspiration hazard

Not available.

Information on the likely routes of exposure

: Not available.

Potential acute health effects

Eye contact : Causes serious eye damage.

Inhalation : Fatal if inhaled.

Skin contact: Causes severe burns. Toxic in contact with skin. Causes damage to organs

following a single exposure in contact with skin. May cause an allergic skin reaction.

Ingestion : Harmful if swallowed. Causes damage to organs following a single exposure if

swallowed.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact: Adverse symptoms may include the following:

pain watering redness

Inhalation : No specific data.

Skin contact: Adverse symptoms may include the following:

pain or irritation

redness

blistering may occur

Ingestion: Adverse symptoms may include the following:

stomach pains

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate : Not available.

effects

Potential delayed effects : Not available.

Long term exposure

Potential immediate : Not available.

effects

Potential delayed effects : Not available.

Potential chronic health effects

General : Causes damage to organs through prolonged or repeated exposure. Once

sensitized, a severe allergic reaction may occur when subsequently exposed to very

low levels.

Carcinogenicity : No known significant effects or critical hazards.Mutagenicity : No known significant effects or critical hazards.

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11. Toxicological information

Reproductive toxicity

: No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Product/ingredient name	Oral (mg/ kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapors) (mg/l)	Inhalation (dusts and mists) (mg/l)
NOVAGUARD 840/890 HARDENER CREAM	579.1	365.7	N/A	0.063	0.5
4,4'-methylenebis(2-methylcyclohexaneamine)	500	300	N/A	0.05	0.42
benzyl alcohol	1230	2000	N/A	N/A	1.5
N-(3-(trimethoxysilyl)propyl)ethylenediamine	2413	N/A	N/A	11	1.5
2,4,6-Tris(dimethylaminomethyl)phenol	1200	1280	N/A	N/A	N/A

Other information

Repeated exposure to high vapor concentrations may cause irritation of the respiratory system and permanent brain and nervous system damage. Inhalation of vapor/aerosol concentrations above the recommended exposure limits causes headaches, drowsiness and nausea and may lead to unconsciousness or death. Trimethoxysilanes are capable of forming methanol if hydrolyzed or ingested. If swallowed, methanol may be harmful or fatal or cause blindness. Contains a substance that may emit formaldehyde if stored beyond its shelf life and/or during cure at curing

12. Ecological information

temperatures greater than 60C (140F).

Toxicity

Product/ingredient name	Result	Species	Exposure
2,4,6-Tris (dimethylaminomethyl)phenol	Acute LC50 175 mg/l	Fish	96 hours

Persistence/degradability

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
benzyl alcohol	-	-	Readily

Bioaccumulative potential

Product/ingredient name	LogPow	BCF	Potential
4,4'-methylenebis (2-methylcyclohexaneamine)	1.8	-	low
benzyl alcohol	0.87	-	low
2,4,6-Tris (dimethylaminomethyl)phenol	0.219	-	low

Mobility in soil

Soil/water partition coefficient (Koc)

: Not available.

Mobility : Not available.

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

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13. Disposal considerations

Disposal methods

: The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and nonrecyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

14. Transport information

	UN	IMDG	IATA
UN number	UN2922	UN2922	UN2922
UN proper shipping name	CORROSIVE LIQUID, TOXIC, N.O.S.	CORROSIVE LIQUID, TOXIC, N.O.S.	CORROSIVE LIQUID, TOXIC, N.O.S.
	(2,2'-dimethyl-4,4'- methylenebis (cyclohexylamine), 2,4,6-tris (dimethylaminomethyl)phenol)	(2,2'-dimethyl-4,4'- methylenebis (cyclohexylamine), 2,4,6-tris (dimethylaminomethyl)phenol)	(2,2'-dimethyl-4,4'- methylenebis (cyclohexylamine), 2,4,6-tris (dimethylaminomethyl)phenol)
Transport hazard class(es)	8 (6.1)	8 (6.1)	8 (6.1)
Packing group	II	II	II
Environmental hazards	Yes. The environmentally hazardous substance mark is not required.	Yes.	Yes. The environmentally hazardous substance mark is not required.
Marine pollutant substances	Not applicable.	(2,2'-dimethyl-4,4'- methylenebis (cyclohexylamine))	Not applicable.

Additional information

UN : None identified.

: The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg. **IMDG**

IATA : The environmentally hazardous substance mark may appear if required by other transportation

regulations.

Special precautions for user : Transport within user's premises: always transport in closed containers that are

upright and secure. Ensure that persons transporting the product know what to do in

the event of an accident or spillage.

Transport in bulk according: Not applicable.

to IMO instruments

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15. Regulatory information

Fire Service Law

None of the components are listed.

Pollutant Release and Transfer Registers (PRTR)

Ingredient name	%	Status	Reference number
4,4'-Methylenebis(2-methylcyclohexaneamine)	79.68	Class 2	559

ISHL

Use of specified chemical substances

None of the components are listed.

Substances requiring labelling

None of the components are listed.

Chemicals requiring notification

None of the components are listed.

Carcinogen

None of the components are listed.

<u>Mutagen</u>

None of the components are listed.

: Not listed **Corrosive liquid**

Occupational Safety and

Health Law

: Not available.

Regulations on the

Prevention of Tetraalkyl

Lead Poisoning

: Not listed

: Not listed

Harmful Substances

Subject to Obtaining

Permission for

Manufacturing

Harmful Substances,

: Not listed

Prohibited for

Manufacturing

Dangerous Substances

: Not listed

Lead regulation

: Not listed

Organic solvents

: Not applicable.

poisoning prevention

Poisonous and Deleterious Substances

None of the components are listed.

Chemical Substances Control Law (CSCL)

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15. Regulatory information

Ingredient name	%		Reference number
Methanol	0.010765	Priority assessment	90
1-Butanol	0.000016485	Priority assessment	124
2,6-Di-tert-butyl-4-methylphenol	0.000011775	Priority assessment	64

High Pressure Gas Control: Not available.

Law

Explosives Control Law

None of the components are listed.

Law Concerning Prevention : Not available.

of Pollution of the Ocean and Maritime Disaster

Maritime Safety Law

Notification Regulating Transportation of Dangerous Materials by Sea

None of the components are listed.

Container class

None of the components are listed.

JSOH Carcinogen : Not listed
List of Specially Controlled : Not listed

Industrial Waste

Japan inventory : All components are listed or exempted.

Road law : Not available.

16. Other information

History

Date of issue/Date of : 11 August 2021

revision

Date of previous issue: 8/11/2021Version: 1.03Prepared by: EHS

Key to abbreviations : ADN = European Provisions concerning the International Carriage of Dangerous

Goods by Inland Waterway

ADR = The European Agreement concerning the International Carriage of

Dangerous Goods by Road ATE = Acute Toxicity Estimate BCF = Bioconcentration Factor

GHS = Globally Harmonized System of Classification and Labelling of Chemicals

IATA = International Air Transport Association IMDG = International Maritime Dangerous Goods

LogPow = logarithm of the octanol/water partition coefficient

MARPOL = International Convention for the Prevention of Pollution From Ships,

1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)

RID = The Regulations concerning the International Carriage of Dangerous Goods

by Rail

UN = United Nations

Indicates information that has changed from previously issued version.

Notice to reader

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16. Other information

The information contained in this data sheet is based on present scientific and technical knowledge. The purpose of this information is to draw attention to the health and safety aspects concerning the products supplied by PPG, and to recommend precautionary measures for the storage and handling of the products. No warranty or guarantee is given in respect of the properties of the products. No liability can be accepted for any failure to observe the precautionary measures described in this data sheet or for any misuse of the products.

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