SAFETY DATA SHEET



Date of issue/Date of revision 6 March 2024 Version 3

Section 1. Identification			
Product code	: 000001011216		
Product name	: SIGMATHERM 500		
Other means of identificat	ion		
00136661; 00136662; 00158	3456; 00159996; 00186131		
Product type	: Liquid.		
Relevant identified uses o	f the substance or mixture and uses advised against		
Product use	Coating. Professional applications, Used by spraying.		
Supplier's details	: PPG Industries (Singapore) Pte. Ltd., No. 1 Tuas Basin Close, Singapore 638803. Tel +65 68653737		
Emergency telephone number (with hours of operation)	: CHEMTREC +(65)-31581349 (CCN 17704)		

Section 2. Hazards identification

Classification of the substance or mixture	 AMMABLE LIQUIDS - Category 3 ACUTE TOXICITY (inhalation) - Category 4 SKIN CORROSION/IRRITATION - Category 2 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
GHS label elements, includi	ng precautionary statements
Hazard pictograms	
Signal word	: 🕅 arning
Hazard statements	 Fammable liquid and vapor. Causes skin irritation. Causes serious eye irritation. Harmful if inhaled. May cause respiratory irritation.
Precautionary statements	

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Section 2. Hazards identification

Prevention	: Wear protective gloves. Wear eye or face protection. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Avoid breathing vapor. Wash thoroughly after handling.
Response	: IF INHALED: Call a POISON CENTER or doctor if you feel unwell. Take off contaminated clothing and wash it before reuse. IF ON SKIN: Wash with plenty of water. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice or attention.
Storage	: Store in a well-ventilated place. Keep container tightly closed.
Disposal	: Not applicable.
Other hererde which do not	. Dralanged or repeated contact may dry skip and cause irritation

result in classification

Other hazards which do not : Prolonged or repeated contact may dry skin and cause irritation.

Section 3. Composition/information on ingredients

Substand	e/mix	ture
Substant		luie

: Mixture

CAS number/other identifiers	2	
CAS number	1	Not applicable.
EC number	1	Mixture.

Ingredient name	%	CAS number
xylene	25 - <50	1330-20-7
Hydrocarbons, C10-C13, n-alkanes, isoalkanes, cyclics, < 2% aromatics	10 - <20	64742-48-9
ethylbenzene	3 - <5	100-41-4
Solvent naphtha (petroleum), light aromatic	3 - <5	64742-95-6
1,2,4-trimethylbenzene	3 - <5	95-63-6
3-ethyltoluene	1 - <3	620-14-4
toluene	0.1 - <0.3	108-88-3

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.

Section 4. First aid measures

iry first aid measures
 Remove contact lenses, irrigate copiously with clean, fresh water, holding the eyelids apart for at least 10 minutes and seek immediate medical advice.
: Remove to fresh air. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel.
 Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognized skin cleanser. Do NOT use solvents or thinners.
 If swallowed, seek medical advice immediately and show this container or label. Keep person warm and at rest. Do NOT induce vomiting.

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Section 4. First aid measures

Most important symptoms/effects, acute and delayed

Potential acute health effe				
Eye contact	Causes serious eye irritation.			
Inhalation	Harmful if inhaled. May cause respiratory irritation.			
Skin contact	Causes skin irritation. Defatting to the skin.			
Ingestion	No known significant effects or critical hazards.			
<u>Over-exposure signs/symp</u>	<u>ns</u>			
Eye contact	Adverse symptoms may include the following: pain or irritation watering redness			
Inhalation	Adverse symptoms may include the following: respiratory tract irritation coughing			
Skin contact	Adverse symptoms may include the following: irritation redness dryness cracking			
Ingestion	No specific data.			
Indication of immediate medical attention and special treatment needed, if necessary				
Notes to physician	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.			
Specific treatments	No specific treatment.			
Protection of first-aiders	No action shall be taken involving any personal risk or without suitable training. 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.	Э		

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media	
Suitable extinguishing media	: Use dry chemical, CO ₂ , water spray (fog) or foam.
Unsuitable extinguishing media	: Do not use water jet.
Specific hazards arising from the chemical	: Flammable liquid and vapor. Runoff to sewer may create fire or explosion hazard. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion.

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Section 5. Fire-fighting measures

Hazardous thermal decomposition products	: Decomposition products may include the following materials: carbon oxides metal oxide/oxides
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. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.
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.

Section 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. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing 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).
Methods and materials for co	ont	<u>ainment and cleaning up</u>
Small spill	:	Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. 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. Use spark-proof tools and explosion-proof equipment. 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.

Section 7. Handling and storage

Precautions for safe handling

Protective measures	:	Fut on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container. Materials such as cleaning rags, paper wipes and protective clothing, which are contaminated with the product may spontaneously self-ignite some hours later. To avoid the risks of fires, all contaminated materials should be stored in purpose-built containers or in metal containers with tight-fitting, self-closing lids. Contaminated materials should be removed from the workplace at the end of each working day and be stored outside.
Advice on general occupational hygiene	:	Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
Conditions for safe storage, including any incompatibilities	:	Store between the following temperatures: 0 to 35°C (32 to 95°F). Store in accordance with local regulations. Store in a segregated and approved area. 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. Eliminate all ignition sources. Separate from oxidizing materials. 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.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
<mark>▼y</mark> lene	Workplace Safety and Health Act (Singapore, 2/2006). [Xylene]
	PEL (short term): 651 mg/m ³ 15 minutes. PEL (short term): 150 ppm 15 minutes. PEL (long term): 434 mg/m ³ 8 hours. PEL (long term): 100 ppm 8 hours.
ethylbenzene	Workplace Safety and Health Act (Singapore, 2/2006). PEL (short term): 543 mg/m ³ 15 minutes. PEL (short term): 125 ppm 15 minutes.

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Section 8. Exposure controls/personal protection

1,2,4-trimethylbenzene toluene	PEL (long term): 434 mg/m ³ 8 hours. PEL (long term): 100 ppm 8 hours. Workplace Safety and Health Act (Singapore, 2/2006). [Trimethyl benzene] PEL (long term): 123 mg/m ³ 8 hours. PEL (long term): 25 ppm 8 hours. Workplace Safety and Health Act (Singapore, 2/2006). PEL (long term): 188 mg/m ³ 8 hours. PEL (long term): 50 ppm 8 hours.
Recommended monitoring procedures	: 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. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.
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 measur	<u>S</u>
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. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
Eye/face protection	: Chemical splash goggles.
Skin 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	: For prolonged or repeated handling, use the following type of gloves: May be used: nitrile rubber Recommended: polyvinyl alcohol (PVA), Viton®

Section 8. Exposure controls/personal protection

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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. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.
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.

Section 9. Physical and chemical properties

<u>Appearance</u>				
Physical state	:	Liquid.		
Color	1	Gray.		
Odor	1	Characteristic.		
рН	1	insoluble in water.		
Boiling point	:	>37.78°C (>100°F)		
Flash point	:	Closed cup: 34.7°C (94.5°F)		
Evaporation rate	:	lighest known value: 0.84 (ethylbenzene) Weighted average: 0.56compared with butyl acetate		
Flammability (solid, gas)	1	liquid		
Vapor pressure	:	Ħ́ighest known value: 1.2 kPa (9.3 mm Hg) (at 20°C) (ethylbenzene). Weighted average: 0.61 kPa (4.58 mm Hg) (at 20°C)		
Vapor density	:	Highest known value: 4.15 (Air = 1) (3-ethyltoluene). Weighted average: 3.76 (Air = 1)		
Relative density	:	1.07		
	:	Media Result		
Solubility(ies)		cold water Not soluble		
Auto-ignition temperature	:	232°C		
Viscosity	:	Kinematic (40°C (104°F)): >21 mm²/s (>21 cSt)		
Viscosity	:	< 30 s (ISO 6mm)		

Section 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 metal oxide/oxides	

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
x ylene	LD50 Dermal	Rabbit	1.7 g/kg	-
-	LD50 Oral	Rat	4.3 g/kg	-
Hydrocarbons, C10-C13, n-	LD50 Dermal	Rabbit	>5000 mg/kg	-
alkanes, isoalkanes, cyclics,				
< 2% aromatics				
	LD50 Oral	Rat	>6 g/kg	-
ethylbenzene	LC50 Inhalation Vapor	Rat	17.8 mg/l	4 hours
	LD50 Dermal	Rabbit	17.8 g/kg	-
	LD50 Oral	Rat	3.5 g/kg	-
Solvent naphtha (petroleum),	LD50 Dermal	Rabbit	3.48 g/kg	-
light aromatic				
	LD50 Oral	Rat	8400 mg/kg	-
1,2,4-trimethylbenzene	LC50 Inhalation Vapor	Rat	18000 mg/m ³	4 hours
	LD50 Oral	Rat	5 g/kg	-
toluene	LC50 Inhalation Vapor	Rat	49 g/m ³	4 hours
	LD50 Dermal	Rabbit	8.39 g/kg	-
	LD50 Oral	Rat	5580 mg/kg	-

Conclusion/Summary : There are no data available on the mixture itself.

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
x ylene	Skin - Moderate irritant	Rabbit	-	24 hours 500 mg	-
	There are no data available There are no data available				

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Section 11. Toxicological information

Respiratory	: There are no data available on the mixture itself.
Sensitization	
Conclusion/Summary	
Skin	: There are no data available on the mixture itself.
Respiratory	: There are no data available on the mixture itself.
Mutagenicity	
Conclusion/Summary	: There are no data available on the mixture itself.
Carcinogenicity	
Conclusion/Summary	: There are no data available on the mixture itself.
Reproductive toxicity	
Conclusion/Summary	: There are no data available on the mixture itself.
Teratogenicity	
Conclusion/Summary	: There are no data available on the mixture itself.

Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
x ýlene	Category 3	-	Respiratory tract irritation
Solvent naphtha (petroleum), light aromatic	Category 3	-	Narcotic effects
1,2,4-trimethylbenzene	Category 3	-	Respiratory tract irritation
toluene	Category 3	-	Narcotic effects

Specific target organ toxicity (repeated exposure)

Name		Route of exposure	Target organs
•	Category 2 Category 2	-	hearing organs -

Aspiration hazard

Name	Result
xylene	ASPIRATION HAZARD - Category 1
Hydrocarbons, C10-C13, n-alkanes, isoalkanes, cyclics, < 2% aromatics	ASPIRATION HAZARD - Category 1
ethylbenzene	ASPIRATION HAZARD - Category 1
Solvent naphtha (petroleum), light aromatic	ASPIRATION HAZARD - Category 1
3-ethyltoluene	ASPIRATION HAZARD - Category 1
toluene	ASPIRATION HAZARD - Category 1

Information on the likely : Not available. routes of exposure

Potential acute health effects

Eye contact	: Causes serious eye irritation.	
Inhalation	: Harmful if inhaled. May cause respiratory irritation.	

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Section 11. Toxicological information

Skin contact: Causes skin irritation. Defatting to the skin.Ingestion: No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact	Adverse symptoms may include the following: pain or irritation watering redness
Inhalation	: Adverse symptoms may include the following: respiratory tract irritation coughing
Skin contact	Adverse symptoms may include the following: irritation redness dryness cracking
Ingestion	No specific data.

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

Long term exposure	
Potential immediate effects	: Not available.
Potential delayed effects	: Not available.
Potential chronic health ef	<u>fects</u>
General	 Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/ or dermatitis.
Carcinogenicity	: 📈 known significant effects or critical hazards.
Mutagenicity	: No known significant effects or critical hazards.
Reproductive toxicity	: No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Route	ATE value
Øermal	3265.62 mg/kg
Inhalation (vapors)	21.31 mg/l
Inhalation (dusts and mists)	2.65 mg/l

Other information

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Section 11. Toxicological information

Prolonged or repeated contact may dry skin and cause irritation. 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. Avoid contact with skin and clothing.

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
ethylbenzene Solvent naphtha (petroleum),	Acute EC50 1.8 mg/l Fresh water Chronic NOEC 1 mg/l Fresh water Acute LC50 8.2 mg/l	Daphnia Daphnia - <i>Ceriodaphnia dubia</i> Fish	48 hours - 96 hours
light aromatic			
onclusion/Summary : There are no data available on the mixture itself.			

Persistence/degradability

Product/ingredient name	Test	Result	Dose	Inoculum
ethylbenzene	-	79 % - Readily - 10 days	-	-
Conclusion/Summary : There are no data available on the mixture itself.				
Product/ingredient name	Aquatic half-life	Photo	lysis	Biodegradability
₩ylene ethylbenzene toluene	- - -	- - -		Readily Readily Readily

Bioaccumulative potential

Product/ingredient name	LogPow	BCF	Potential
x ylene	3.12	7.4 to 18.5	Low
ethylbenzene	3.6	79.43	Low
1,2,4-trimethylbenzene	3.63	120.23	Low
3-ethyltoluene	3.98	-	Low
toluene	2.73	8.32	Low

Mobility in soil

Soil/water partition coefficient (Koc)

: Not available.

Other adverse effects

: No known significant effects or critical hazards.

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Section 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 non-recyclable 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. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	UN	IMDG	ΙΑΤΑ
UN number	UN1263	UN1263	UN1263
UN proper shipping name	PAINT	PAINT	PAINT
Transport hazard class(es)	3	3	3
Packing group	III	III	
Environmental hazards	No.	No.	No.
Marine pollutant substances	Not applicable.	Not applicable.	Not applicable.

Additional information

- UN: None identified.IMDG: None identified.IATA: None identified.
- 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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Section 15. Regulatory information

Singapore - hazardous chemicals under government control

None.

International regulations Montreal Protocol Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

History

Section 16. Other information

HISTORY	
Date of issue/Date of revision	: 6 March 2024
Date of previous issue	: 10/25/2023
Version	: 3
Prepared by	: EHS
Key to abbreviations	 ATE = Acute Toxicity Estimate BCF = Bioconcentration Factor GHS = Globally Harmonized System of Classification and Labelling of Chemicals IATA = International Air Transport Association IBC = Internediate Bulk Container 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) UN = United Nations

Indicates information that has changed from previously issued version.

Notice to reader

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.