

# Safety Data Sheet according to Regulation (EC) No. 2015/830

# SECTION 1: Identification of the Substance/Mixture and the Company/Undertaking

1.1 Product Identifier FLOWFRESH RT/HF/ESD Revision Date: 20/09/2018

HARDENER

Product Name: Flowfresh RT/HF/ESD Hardener Supercedes Date: 21/07/2017

1.2 Relevant identified uses of the substance or mixture and uses advised against Hand-mixing with intimate contact and only PPE available. Wide dispersive indoor use resulting in inclusion into or onto a matrix. For use by appropriately trained applicators. Roller application or brushing. Low energy spreading of coatings. Advised against: Home DIY applications, because of the health hazards and training required.

Hardener for 2 components coatings - Industrial use.

# 1.3 Details of the supplier of the safety data sheet

Supplier: Flowcrete UK Ltd.

The Flooring Technology Centre

**Booth Lane** 

Moston, Sandbach, Cheshire. UK

CW11 3QF

Tel: +44 (0)1270 753000 Fax: +44 (0)1270 753333 ehs.uk@flowcrete.com http://www.flowcrete.co.uk

Datasheet Produced by:

ehs.uk@flowcrete.com

1.4 Emergency telephone number:

CHEMTREC +001 703 5273887 (Outside US) CHEMTREC 1-800-424-9300 (Inside US)

# **SECTION 2: Hazard Identification**

#### 2.1 Classification of the substance or mixture

Classification according to Classification, Labeling & Packaging Regulation (EC) 1272/2008

#### HAZARD STATEMENTS

Other EU extensions	EUH204
Skin Irritation, category 2	H315
Skin Sensitizer, category 1	H317
Eye Irritation, category 2	H319
Acute Toxicity, Inhalation, category 4	H332
Respiratory Sensitizer, category 1	H334
STOT, single exposure, category 3, RTI	H335
Carcinogenicity, category 2	H351

H373

STOT, repeated exposure, category 2

# Label elements

# Symbol(s) of Product



# Signal Word

Danger

2.2

# Named Chemicals on Label

4,4'-Methylenediphenyl diisocyanate, Diphenylmethane-2,4'-diisocyanate, Isocyanic acid, polymethylenepolyphenylene ester

# **HAZARD STATEMENTS**

Other EU extensions	EUH204	Contains isocyanates. May produce an allergic reaction.
Skin Irritation, category 2	H315	Causes skin irritation.
Skin Sensitizer, category 1	H317	May cause an allergic skin reaction.
Eye Irritation, category 2	H319	Causes serious eye irritation.
Acute Toxicity, Inhalation, category 4	H332	Harmful if inhaled.
Respiratory Sensitizer, category 1	H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
STOT, single exposure, category 3, RTI	H335	May cause respiratory irritation.
Carcinogenicity, category 2	H351	Suspected of causing cancer.
STOT, repeated exposure, category 2	H373	May cause damage to organs through prolonged or repeated exposure.
PRECAUTION PHRASES		
	P260	Do not breathe dust/fume/gas/mist/vapours/spray.
	P280	Wear protective gloves/protective clothing/eye protection/ face protection.
	D28/I	Wear respiratory protection

P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P280	Wear protective gloves/protective clothing/eye protection/ face protection.
P284	Wear respiratory protection.
P285	In case of inadequate ventilation wear respiratory protection.
P302+352	IF ON SKIN: Wash with plenty of soap and water.
P304+340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305+351+338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do so. Continue rinsing.
P308+313	IF exposed or concerned: Get medical advice/attention.
P314	Get medical advice/attention if you feel unwell.
P333+313	If skin irritation or rash occurs: Get medical advice/attention.
P341	If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.
P342+311	If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician.

# 2.3 Other hazards

No Information

# Results of PBT and vPvB assessment:

The product does not meet the criteria for PBT/VPvB in accordance with Annex XIII.

# **SECTION 3: Composition/Information On Ingredients**

#### 3.2 Mixtures

# **Hazardous Ingredients**

CAS-No.	EINEC No.	Name According to EEC	<u>%</u>
9016-87-9	- (Polymer)	Isocyanic acid, polymethylenepolyphenylene ester	50 - <75
5873-54-1	227-534-9	Diphenylmethane-2,4'-diisocyanate	10 - <25

Date Printed: 27/09/2019 Product: FLOWFRESH RT/HF/ESD HARDENER

101-68-8 202-966-0 4,4'-Methylenediphenyl diisocyanate 10 - <25

CAS-No. REACH Reg No. **CLP Symbols CLP Hazard Statements M-Factors** 9016-87-9 **GHS07-GHS08** H315-317-319-332-334-335-351-373 Not required 5873-54-1 01-2119480143-45 **GHS07-GHS08** H315-317-319-332-334-335-351-373 101-68-8 01-2119457014-47 GHS07-GHS08 H315-317-319-332-334-335-351-373

Additional Information: The text for CLP Hazard Statements shown above (if any) is given in Section 16.

# **SECTION 4: First-aid Measures**

#### 4.1 Description of First Aid Measures

**GENERAL NOTES:** When symptoms persist or in all cases of doubt seek medical advice. Show this safety data sheet to the doctor in attendance. Remove contaminated clothing and shoes.

**AFTER INHALATION:** Move to fresh air. Consult a physician after significant exposure. Keep respiratory tract clear. Remove person to fresh air. If signs/symptoms continue, get medical attention.

**AFTER SKIN CONTACT:** Use a mild soap if available. Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. If skin irritation persists, call a physician.

**AFTER EYE CONTACT:** Keep eye wide open while rinsing. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses. If eye irritation persists, consult a specialist.

**AFTER INGESTION:** Gently wipe or rinse the inside of the mouth with water. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. If swallowed, DO NOT induce vomiting unless directed to do so by medical personnel.

#### Self protection of the first aider:

No action shall be taken involving any personal risk or without suitable training. 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.

#### 4.2 Most important symptoms and effects, both acute and delayed

No Information

#### 4.3 Indication of any immediate medical attention and special treatment needed

No information available on clinical testing and medical monitoring. Specific toxicological information on substances, if available, can be found in section 11.

#### **SECTION 5: Fire-fighting Measures**

# 5.1 Extinguishing Media:

Dry Chemical, Foam, Water Fog

FOR SAFETY REASONS NOT TO BE USED: Alcohol, Alcohol based solutions, any other media not listed above.

#### 5.2 Special hazards arising from the substance or mixture

No Information

#### 5.3 Advice for firefighters

Use water spray to cool unopened containers. Fire will produce dense black smoke containing hazardous combustion products (see section 10). In the event of fire, wear self-contained breathing apparatus. High volume water jet. Hazardous decomposition products formed under fire conditions. Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

# **SECTION 6: Accidental Release Measures**

#### 6.1 Personal precautions, protective equipment and emergency procedures

Ensure adequate ventilation. Use personal protective equipment. Keep people away from and upwind of spill/leak.

# 6.2 Environmental precautions

Do not allow material to contaminate ground water system. Prevent product from entering drains. Keep the container open.

#### 6.3 Methods and material for containment and cleaning up

Prevent further leakage or spillage if safe to do so. Contain spillage, soak up with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to a container for disposal according to local / national regulations (see section 13). After cleaning, flush away traces with water. Refer to protective measures listed in sections 7 and 8.

# 6.4 Reference to other sections

Date Printed: 27/09/2019

**FURTHER INSTRUCTIONS:** Please refer to EU disposal requirements or country specific disposal requirements for this material. See Section 13 for further information.

# **SECTION 7: Handling and Storage**

#### 7.1 Precautions for safe handling

Use only in area provided with appropriate exhaust ventilation. Provide sufficient air exchange and/or exhaust in work rooms. Wear personal protective equipment. Do not breathe vapours or spray mist. Persons with a history of skin sensitisation problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this preparation is being used.

Repeated or prolonged skin contact may cause skin irritation and/or dermatitis and sensitization of susceptible persons. In the case of sensitisation to any of the ingredients, it is inadvisable to work with the product. Handle in accordance with good industrial hygiene and safety practice. Keep working clothes separately. Keep away from food, drink and animal feedingstuffs. Wash hands before breaks and at the end of workday. When using, do not eat, drink or smoke. Wash hands and face before breaks and immediately after handling the product.

# 7.2 Conditions for safe storage, including any incompatibilities

**CONDITIONS TO AVOID:** Avoid temperatures above 40 °C, direct sunlight and contact with sources of heat. Do not freeze. Avoid dust accumulation in enclosed space.

**STORAGE CONDITIONS:** Store in original container. Keep container tightly closed in a dry and well-ventilated place. Store at room temperature in the original container. Keep locked up or in an area accessible only to qualified or authorised persons. Keep container closed when not in use. Store in a dry, well ventilated place away from sources of heat, ignition and direct sunlight.

#### 7.3 Specific end use(s)

Part of the Flowfresh/Flowcrete Multipack system. For use at application temperatures 10 - 25°C. The mixing and application to be in accordance with the technical data sheets.

# **SECTION 8: Exposure Controls/Personal Protection**

# 8.1 Control parameters

**Name** 

# Ingredients with Occupational Exposure Limits (UK WELS)

<u>Name</u>	CAS-No.	LTEL ppm	STEL ppm	STEL mg/m3	LTEL mg/m3
Isocyanic acid, polymethylenepolyphenyle ester	ene9016-87-9			0.07	0.02
Diphenylmethane-2,4'-diisocyanate	5873-54-1			0.07	0.02
4,4'-Methylenediphenyl diisocyanate	101-68-8			0.07	0.02

Isocyanic acid, polymethylenepolyphenylene ester	9016-87-9	Isocyanates, all (as - NCO)
Diphenylmethane-2,4'-diisocyanate	5873-54-1	Isocyanates, all (as - NCO)
4,4'-Methylenediphenyl diisocyanate	101-68-8	Isocyanates, all (as - NCO)

**FURTHER ADVICE:** Refer to the regulatory exposure limits for the workforce enforced in each country. Some components may not have been classified under the EU CLP Regulation.

CAS-No. OEL Note

#### 8.2 Exposure controls

#### Personal Protection

**RESPIRATORY PROTECTION:** In case of insufficient ventilation wear suitable respiratory equipment. Respirator with a vapor filter.

**EYE PROTECTION:** Eye wash bottle with pure water. Safety goggles. Tightly fitting safety goggles. Safety glasses with side-shields conforming to EN 166.

HAND PROTECTION: Isocyanates can harden gloves and increase the risk of their splitting. Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough. Impervious gloves. Take note of the information given by the producer concerning permeability and break through times, and of special workplace conditions (mechanical strain, duration of contact). Long sleeved clothing. Remove and wash contaminated clothing before re-use. Remove

contaminated clothing and protective equipment before entering eating areas.

# **OTHER PROTECTIVE EQUIPMENT:** No Information

**ENGINEERING CONTROLS:** At temperatures below 40°C, provide a good standard of general ventilation (not less than 5 air changes per hour). At temperatures over 40°C - and always if sprayed - exhaust ventilation is required. Avoid contact with skin, eyes and clothing. Ensure adequate ventilation, especially in confined areas.

#### **Chemical Name:**

Diphenylmethane-2,4'-diisocyanate

**EC No.: CAS-No.:** 227-534-9 5873-54-1

#### DNELs - Derived no effect level

		Wo	orkers			Cons	sumers	
Route of	Acute effect	Acute effects	Chronic	Chronic effects	Acute effect	Acute effects	Chronic	Chronic effects
Exposure	local	systemic	effects local	systemic	local	systemic	effects local	systemic
Oral	Not required					20 mg/kg bw/d		
Inhalation	0.1 mg/m <sup>3</sup>	0.1 mg/m <sup>3</sup>	0.05 mg/m <sup>3</sup>	0.05 mg/m <sup>3</sup>	0.05 mg/m <sup>3</sup>	0.05 mg/m <sup>3</sup>	0.025 mg/m <sup>3</sup>	0.025 mg/m <sup>3</sup>
Dermal	28.7 mg/cm <sup>2</sup>	50 mg/kg bw/d			17.2 mg/cm <sup>2</sup>	25 mg/kg bw/d		<u> </u>

#### PNEC's - Predicted no effect concentration

Environmental protection target	PNEC
Fresh water	>1 mg/l
Fresh water sediments	
Marine water	>0.1 mg/l
Marine sediments	
Food chain	
Microorganisms in sewage treatment	>1 mg/l
soil (agricultural)	>1 mg/kg
Air	

#### **Chemical Name:**

4,4'-Methylenediphenyl diisocyanate

**EC No.: CAS-No.:** 202-966-0 101-68-8

# **DNELs - Derived no effect level**

	Workers				Consumers			
Route of	Acute effect	Acute effects	Chronic	Chronic effects	Acute effect	Acute effects	Chronic	Chronic effects
Exposure	local	systemic	effects local	systemic	local	systemic	effects local	systemic
Oral		Not required				20 mg/kg bw/d		
Inhalation	0.1 mg/m <sup>3</sup>	0.1 mg/m <sup>3</sup>	0.05 mg/m <sup>3</sup>	0.05 mg/m <sup>3</sup>	0.05 mg/m <sup>3</sup>	0.05 mg/m <sup>3</sup>	0.025 mg/m <sup>3</sup>	0.025 mg/m <sup>3</sup>
Dermal	28.7 mg/cm <sup>2</sup>	50 mg/kg bw/d	_	<u> </u>	17.2 mg/cm <sup>2</sup>	25 mg/kg bw/d		

#### PNEC's - Predicted no effect concentration

Environmental protection target	PNEC
Fresh water	>1 mg/l
Fresh water sediments	
Marine water	>0.1 mg/l
Marine sediments	
Food chain	
Microorganisms in sewage treatment	>1 mg/l
soil (agricultural)	>1 mg/kg
Air	

# **SECTION 9: Physical and Chemical Properties**

9.1 Information on basic physical and chemical properties

Appearance: Not determined

Physical State Not determined

Odor Not determined

Odor threshold Not determined

pH Not determined

Melting point / freezing point (°C) Not determined

Boiling point/range (°C) N.D. - N.D.

Flash Point, (°C) 999

Evaporation rate Not determined Flammability (solid, gas) Not determined

Upper/lower flammability or explosive

limits

999 - 0

Vapour Pressure Not determined Vapour density Not determined Relative density Not determined Solubility in / Miscibility with water Not determined Partition coefficient: n-octanol/water Not determined Auto-ignition temperature (°C) Not determined Decomposition temperature (°C) Not determined Viscosity Not determined **Explosive properties** Not determined Oxidising properties Not determined

9.2 Other information

VOC Content g/l: <20

This is a calculated maximum VOC content for the mixed ready to use product (to Directive 2004/42/EC).

# **SECTION 10: Stability and Reactivity**

# 10.1 Reactivity

No reactivity hazards known under normal storage and use conditions.

#### 10.2 Chemical stability

Stable under recommended storage conditions. Container can be pressurized by carbon dioxide due to reaction with humid air and/or water. Stable under normal conditions.

#### 10.3 Possibility of hazardous reactions

Polymerises at about 200°C with evolution of CO2. Hazardous polymerisation does not occur.

#### 10.4 Conditions to avoid

Avoid temperatures above 40 °C, direct sunlight and contact with sources of heat. Do not freeze. Avoid dust accumulation in enclosed space.

# 10.5 Incompatible materials

Keep away from oxidising agents, strongly acid or alkaline materials, as well as of amines, alcohols and water. Amines and alcohols cause exothermic reactions.

# 10.6 Hazardous decomposition products

In case of fire **hazardous decomposition products** may be produced such as: Carbon dioxide (CO2), carbon monoxide (CO), oxides of nitrogen (NOx), dense black smoke. Preparation reacts slowly with water resulting in evolution of CO2. Evolution of CO2 in closed containers causes overpressure and produces a risk of bursting.

# **SECTION 11: Toxicological Information**

# 11.1 Information on toxicological effects

**Acute Toxicity:** 

Oral LD50: No Information

Inhalation LC50: No Information

Irritation: No information available.

Corrosivity: No information available.

Sensitization: No information available.

Repeated dose toxicity: No information available.

Carcinogenicity: No information available.

Mutagenicity: No information available.

**Toxicity for reproduction:** No information available.

STOT-single exposure: No information available.

STOT-repeated exposure: No information available.

Aspiration hazard: No information available.

If no information is available above under Acute Toxicity then the acute effects of this product have not been tested. Data on individual components are tabulated below:

9	CAS-No.	Name According to EEC	Oral LD50	Dermal LD50	Vapor LC50	Gas LC50	Dust/Mist LC50
	9016-87-9	Isocyanic acid, polymethylenepolyphenylene ester	>10000 mg/kg (rat, OECD TG 401)	>9400 mg/kg (rabbit, OECD TG 402)			1.5 mg/l (ATE)
	5873-54-1	Diphenylmethane-2,4'-diisocyanate	>2000 mg/kg (rat)	>9400 mg/kg (rabbit, OECD TG 402)			1.5 mg/l (ATE)
	101-68-8	4,4'-Methylenediphenyl diisocyanate	>2000 mg/kg (rat)	>9400 mg/kg (rabbit, OECD TG 402)			1.5 mg/l (ATE)

#### Additional Information:

In the case of sensitisation to any of the ingredients, it is inadvisable to work with the product. Repeated or prolonged skin contact may cause skin irritation and/or dermatitis and sensitization of susceptible persons. Persons allergic to isocyanates, and particularly those suffering from asthma or other respiratory conditions, should not work with isocyanates. Isocyanates may cause acute irritation and/or sensitisation of the respiratory system leading to tightness of the chest, wheeziness and an asthmatic condition.

# **SECTION 12: Ecological Information**

#### 12.1 Toxicity:

EC50 48hr (Daphnia):

IC50 72hr (Algae):

No information

No information

No information

No information

No information

No information

**12.3 Bioaccumulative potential:** No information

**12.4 Mobility in soil:** No information

12.5 Results of PBT and vPvB

assessment:

The product does not meet the criteria for PBT/VPvB in accordance with Annex XIII.

12.6 Other adverse effects:

#### No information

CAS-No.	Name According to EEC	EC50 48hr	IC50 72hr	LC50 96hr
9016-87-9	Isocyanic acid, polymethylenepolyphenylene ester	>1000 mg/l (24 h) OECD 202	>1640 mg/l OECD 201	>1000 mg/l (Danio rerio) OECD 203
5873-54-1	Diphenylmethane-2,4'-diisocyanate	>1000 mg/l OECD 202	>1640 mg/l OECD 201	>1000 mg/l (danio rerio) OECD 203
101-68-8	4,4'-Methylenediphenyl diisocyanate	> 1000 mg/l (24h) OECD 202	> 1640 mg/l OECD 201	> 1000 mg/l (danio rerio) OECD 203

# **SECTION 13: Disposal Considerations**

13.1 WASTE TREATMENT METHODS: Dispose of as hazardous waste in compliance with local and national regulations. If recycling is not practicable, dispose of in compliance with local regulations. Container hazardous when empty. Empty containers should be taken to an approved waste handling site for recycling or disposal. The product should not be allowed to enter drains, water courses or the soil.

**European Waste Code:** 080501\* Packaging Waste Code: 150110

SECTION	14: Transport	t Information
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14.1 UN number

14.2	UN proper shipping name	Not regulated for transport according to ADR/RID, IMDG, and IATA regulations.
	Technical name	Not applicable
14.3	Transport hazard class(es)	Not applicable
	Subsidiary shipping hazard	Not applicable
14.4	Packing group	Not applicable
14.5	Environmental hazards	Not applicable

Not applicable

14.6 Special precautions for user Not applicable EmS-No.: Not applicable
 14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC code

# **SECTION 15: Regulatory Information**

15.1 Safety, health and environmental regulations/legislation for the substance or mixture:

# **National Regulations:**

Denmark Product Registration Number:

Danish MAL Code:

Not available

Danish MAL Code - Mixture:

Not available

Sweden Product Registration Number:

Not available

Norway Product Registration Number:

Not available

Germany WGK Class:

Not available

Covered by Directive 2012/18/EC (Seveso III): Not applicable

Restrictions to product or to substances according to Annex XVII, Regulation (CE) 1907/2006:

Not applicable

**Annex XIV - Authorisation List:** 

CAS-No. Name According to EEC

Not Applicable

SVHC - Substances of very high concern (Candidate List):

CAS-No. Name According to EEC

Not Applicable

# 15.2 Chemical Safety Assessment:

No Chemical Safety Assessment has been carried out for this substance/mixture by the supplier.

# SECTION 16: Other Information

#### Text for CLP Hazard Statements shown in Section 3 describing each ingredient:

H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335	May cause respiratory irritation.
H351	Suspected of causing cancer.
H373	May cause damage to organs through prolonged or repeated exposure.

#### Reasons for revision

Substance Hazard Threshold % Changed

Substance and/or Product Properties Changed in Section(s):

03 - Composition/Information On Ingredients

08 - Exposure Controls/Personal Protection

11 - Toxicological Information15 - Regulatory Information

Revision Statement(s) Changed

This Safety Data Sheet (SDS) has been revised to meet the new EU CLP requirements. There have been both formatting and content changes based on the CLP classification (if applicable), please review each section of the SDS for specific changes.

List of References:

This Safety Data Sheet was compiled with data and information from the following sources:

The Ariel Regulatory Database provided by the 3E Corporation in Copenhagen, Denmark; European Union Commission Regulation No. 1907/2006 on REACH as amended within Commission Regulation (EU) 2015/830;

European Union (EC) Regulation No. 1272/2008 on the classification, labelling and packaging of substances and mixtures (CLP Regulation) and subsequent technical progress adaptations (ATP); EU Council Decision 2000/532/EC and its Annex entitled "List of Wastes".

### Acronym & Abbreviation Key:

CLP Classification, Labeling & Packaging Regulation

EC European Commission
EU European Union
US United States

CAS Chemical Abstract Service

EINECS European Inventory of Existing Chemical Substances

REACH Registration, Evaluation, Authorization of Chemicals Regulation

GHS Globally Harmonized System of Classification and Labeling of Chemicals

LTEL Long term exposure limit
STEL Short term exposure limit

Product: FLOWFRESH RT/HF/ESD HARDENER

ppm Parts per million

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mg/m3 Milligrams per cubic meter

TLV Threshold Limit Value

ACGIH American Conference of Governmental Industrial Hygienists

OSHA Occupational Safety & Health Administration

Occupational exposure limit

PEL Permissible Exposure Limits
VOC Volatile organic compounds

g/l Grams per liter

mg/kg Milligrams per kilogram

N/A Not applicable LD50 Lethal dose at 50%

LC50 Lethal concentration at 50%

EC50 Half maximal effective concentration
IC50 Half maximal inhibitory concentration
PBT Persistent bioaccumulative toxic chemical
vPvB Very persistent and very bioaccumulative

EEC European Economic Community

ADR International Transport of Dangerous Goods by Road RID International Transport of Dangerous Goods by Rail

UN United Nations

IMDG International Maritime Dangerous Goods Code
IATA International Air Transport Association

MARPOL International Convention for the Prevention of Pollution From Ships, 1973 as

modified by the Protocol of 1978

IBC International Bulk Container RTI Respiratory Tract Irritation

NE Narcotic Effects

For further information, please contact: Technical Services Department

The information on this sheet corresponds to our present knowledge. It is not a specification and it does not guarantee specific properties. The information is intended to provide general guidance as to health and safety based upon our knowledge of the handling, storage, and use of the product. It is not applicable to unusual or non-standard uses of the product or where instructions and recommendations are not followed.