



# Cerium (IV) sulfate 0.1M Volumetric Solution as specified in appendix 1B of the British Pharmacopoeia (BPV 666)

## Safety Data Sheet

according to Regulation (EC) No. 453/2010

Date of issue: 31/03/2015

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### SECTION 1: Identification of the substance/mixture and of the company/undertaking

#### 1.1. Product identifier

Product form : Mixture  
Name : Cerium (IV) sulfate 0.1M Volumetric Solution as specified in appendix 1B of the British Pharmacopoeia (BPV 666)  
Product code : BPV666

#### 1.2. Relevant identified uses of the substance or mixture and uses advised against

##### 1.2.1. Relevant identified uses

Main use category : Industrial use, Professional use  
Industrial/Professional use spec : Industrial  
For professional use only  
Function or use category : Laboratory chemicals

##### 1.2.2. Uses advised against

No additional information available

#### 1.3. Details of the supplier of the safety data sheet

##### Spectracer UK Ltd.

Second Floor,  
27 Gloucester Place,  
London,  
W1U 8HU,  
United Kingdom.

Tel: +44 (0) 207 193 9114

Fax: +44 (0) 203 432 4686

Email: [contact@spectracer.co.uk](mailto:contact@spectracer.co.uk)

Web: [www.spectracer.com](http://www.spectracer.com)

#### 1.4. Emergency telephone number

Emergency number : 112 (EU)

Country	Organisation/Company	Address	Emergency number
IRELAND (REPUBLIC OF)	National Poisons Information Centre Beaumont Hospital	Beaumont Hospital Beaumont Road 9 Dublin	: +353 1 8379964
UNITED KINGDOM	National Poisons Information Service (NHS Direct)	<a href="http://www.npis.org">http://www.npis.org</a>	111 (England & Wales only) or 112 (EU) or 08454 24 24 24 (Scotland)

### SECTION 2: Hazards identification

#### 2.1. Classification of the substance or mixture

##### Classification according to Regulation (EC) No. 1272/2008 [CLP]

Skin Irrit. 2 H315

Eye Irrit. 2 H319

Full text of H-statements: see section 16

##### Classification according to Directive 67/548/EEC [DSD] or 1999/45/EC [DPD]

Xi; R36/38

Full text of R-phrases: see section 16

##### Adverse physicochemical, human health and environmental effects

No additional information available

### 2.2. Label elements

#### Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP) :



GHS07

Signal word (CLP) :

Warning

Hazard statements (CLP) :

H315 - Causes skin irritation  
H319 - Causes serious eye irritation

Precautionary statements (CLP) :

P264 - Wash hands thoroughly after handling  
P280 - Wear eye protection, face protection, protective clothing, protective gloves  
P302+P352 - IF ON SKIN: Wash with plenty of water  
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
P332+P313 - If skin irritation occurs: Get medical advice/attention  
P337+P313 - If eye irritation persists: Get medical advice/attention  
P362+P364 - Take off contaminated clothing and wash it before reuse

### 2.3. Other hazards

No additional information available

## SECTION 3: Composition/information on ingredients

### 3.1. Substance

Not applicable

### 3.2. Mixture

Name	Product identifier	%	Classification according to Directive 67/548/EEC
sulphuric acid	(CAS No) 7664-93-9 (EC no) 231-639-5 (EC index no) 016-020-00-8	1 - 5	C; R35
cerium(IV) sulfate	(CAS No) 13590-82-4 (EC no) 237-029-5	1 - 5	O; R8 Xi; R36/37/38

Name	Product identifier	Specific concentration limits
sulphuric acid	(CAS No) 7664-93-9 (EC no) 231-639-5 (EC index no) 016-020-00-8	(5 =< C < 15) Xi; R36/38 (C >= 15) C; R35

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
sulphuric acid	(CAS No) 7664-93-9 (EC no) 231-639-5 (EC index no) 016-020-00-8	1 - 5	Skin Corr. 1A, H314
cerium(IV) sulfate	(CAS No) 13590-82-4 (EC no) 237-029-5	1 - 5	Ox. Sol. 3, H272 Eye Irrit. 2, H319 STOT SE 3, H335 Skin Irrit. 2, H315

Name	Product identifier	Specific concentration limits
sulphuric acid	(CAS No) 7664-93-9 (EC no) 231-639-5 (EC index no) 016-020-00-8	(5 =< C < 15) Eye Irrit. 2, H319 (5 =< C < 15) Skin Irrit. 2, H315 (C >= 15) Skin Corr. 1A, H314

Full text of R- and H-statements: see section 16

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

- First-aid measures general : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).
- First-aid measures after inhalation : Allow breathing of fresh air. Allow the victim to rest.

First-aid measures after skin contact	: Wash with plenty of soap and water. Wash contaminated clothing before reuse. If skin irritation occurs: Gently wash with plenty of soap and water. Get medical advice/attention.
First-aid measures after eye contact	: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Rinse cautiously with water for several minutes. Get medical advice/attention.
First-aid measures after ingestion	: Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention.

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

Symptoms/injuries after skin contact	: Causes skin irritation.
Symptoms/injuries after eye contact	: Causes serious eye irritation.

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

Treat symptomatically.

### SECTION 5: Firefighting measures

#### 5.1. Extinguishing media

Suitable extinguishing media	: Foam. Dry powder. Carbon dioxide. Water spray. Sand.
Unsuitable extinguishing media	: Do not use a heavy water stream.

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

No additional information available

#### 5.3. Advice for firefighters

Firefighting instructions	: Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment.
Protection during firefighting	: Do not enter fire area without proper protective equipment, including respiratory protection.

### SECTION 6: Accidental release measures

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

##### 6.1.1. For non-emergency personnel

Emergency procedures	: Evacuate unnecessary personnel.
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##### 6.1.2. For emergency responders

Protective equipment	: Equip cleanup crew with proper protection.
Emergency procedures	: Ventilate area.

#### 6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if substance enters sewers or public waters.

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

Methods for cleaning up	: Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Store away from other materials.
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#### 6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

### SECTION 7: Handling and storage

#### 7.1. Precautions for safe handling

Precautions for safe handling	: Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapour.
Hygiene measures	: Wash ... thoroughly after handling.

#### 7.2. Conditions for safe storage, including any incompatibilities

Storage conditions	: Keep only in the original container in a cool, well ventilated place away from : Direct sunlight, Heat and ignition sources. Keep only in the original container in a cool, well ventilated place away from : Keep container closed when not in use.
Incompatible products	: Strong bases. Strong acids.
Incompatible materials	: Sources of ignition. Direct sunlight.

#### 7.3. Specific end use(s)

No additional information available

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## Safety Data Sheet

according to Regulation (EC) No. 453/2010

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### SECTION 8: Exposure controls/personal protection

#### 8.1. Control parameters

sulphuric acid (7664-93-9)		
EU	Local name	Sulphuric acid (mist)
EU	IOELV TWA (mg/m <sup>3</sup> )	0,05 mg/m <sup>3</sup>
Austria	Local name	Schwefelsäure
Austria	MAK (mg/m <sup>3</sup> )	0,1 mg/m <sup>3</sup>
Austria	MAK Short time value (mg/m <sup>3</sup> )	0,2 mg/m <sup>3</sup>
Belgium	Local name	Acide sulfurique
Belgium	Limit value (mg/m <sup>3</sup> )	1 mg/m <sup>3</sup>
Bulgaria	Local name	Сярна киселина
Bulgaria	OEL TWA (mg/m <sup>3</sup> )	1 mg/m <sup>3</sup>
Croatia	Local name	Sumporna kiselina
Croatia	GVI (granična vrijednost izloženosti) (mg/m <sup>3</sup> )	0,05 mg/m <sup>3</sup>
Croatia	Naznake (HR)	C EU***
Czech Republic	Local name	Kyselina sírová, jako SO
Czech Republic	Expoziční limity (PEL) (mg/m <sup>3</sup> )	1 mg/m <sup>3</sup>
Czech Republic	Expoziční limity (NPK-P) (mg/m <sup>3</sup> )	2 mg/m <sup>3</sup>
Denmark	Local name	Svovlsyre
Denmark	Grænseværdie (langvarig) (mg/m <sup>3</sup> )	1 mg/m <sup>3</sup>
Estonia	Local name	Väävelhape, udu
Estonia	OEL TWA (mg/m <sup>3</sup> )	0,05 mg/m <sup>3</sup>
Finland	Local name	Rikkihappo
Finland	HTP-arvo (8h) (mg/m <sup>3</sup> )	0,05 mg/m <sup>3</sup>
Finland	HTP-arvo (15 min)	0,1 mg/m <sup>3</sup>
France	Local name	Acide sulfurique
France	VME (mg/m <sup>3</sup> )	1 mg/m <sup>3</sup>
France	VLE (mg/m <sup>3</sup> )	3 mg/m <sup>3</sup>
Germany	Local name	Schwefelsäure
Germany	TRGS 900 Occupational exposure limit value (mg/m <sup>3</sup> )	0,1 mg/m <sup>3</sup>
Germany	Remark (TRGS 900)	DFG, EU, Y
Greece	OEL TWA (mg/m <sup>3</sup> )	1 mg/m <sup>3</sup>
Hungary	Local name	KÉNSAV
Hungary	AK-érték	0,05 mg/m <sup>3</sup>
Hungary	Megjegyzések (HU)	m; l.
Latvia	Local name	Sērskābe3 (migla, kas tiek definēta kā torakālā frakcija)
Latvia	OEL TWA (mg/m <sup>3</sup> )	0,05 mg/m <sup>3</sup>
Lithuania	Local name	Sieros rūgštis (rūkas)
Lithuania	IPRV (mg/m <sup>3</sup> )	0,05 mg/m <sup>3</sup>
Lithuania	TPRV (mg/m <sup>3</sup> )	3 mg/m <sup>3</sup>
Netherlands	Local name	Zwavelzuur (nevel), gedefinieerd als de thoracale fractie
Netherlands	Grenswaarde TGG 8H (mg/m <sup>3</sup> )	0,05 mg/m <sup>3</sup>
Netherlands	Grenswaarde TGG 8H (ppm)	Zwavelzuur (nevel), gedefinieerd als de thoracale fractie, 0.012 ppm; Netherlands; Time-weighted average exposure limit 8 h; Public occupational exposure limit value
Portugal	Local name	Ácido sulfúrico
Portugal	OEL TWA (mg/m <sup>3</sup> )	0,2 mg/m <sup>3</sup>

# Cerium (IV) sulfate 0.1M Volumetric Solution as specified in appendix 1B of the British Pharmacopoeia (BPV 666)

## Safety Data Sheet

according to Regulation (EC) No. 453/2010

WWW.FASTMSDS.COM

sulphuric acid (7664-93-9)		
Romania	Local name	Acid sulfuric și anhidrida sulfuroasa
Romania	OEL TWA (mg/m <sup>3</sup> )	0,50 mg/m <sup>3</sup>
Romania	OEL STEL (mg/m <sup>3</sup> )	1 mg/m <sup>3</sup>
Slovenia	Local name	žveplova kislina - meгла in žveplov trioksid (merjeno kot žveplova kislina)
Slovenia	OEL TWA (mg/m <sup>3</sup> )	0,05 mg/m <sup>3</sup>
Spain	Local name	Ácido sulfúrico (niebla) Fracción torácica
Spain	VLA-ED (mg/m <sup>3</sup> )	0,05 mg/m <sup>3</sup>
Sweden	Local name	Sulfuric acid
Sweden	nivagränsvärde (NVG) (mg/m <sup>3</sup> )	1 mg/m <sup>3</sup>
Sweden	kortidsvärde (KTV) (mg/m <sup>3</sup> )	3 mg/m <sup>3</sup>
United Kingdom	Local name	Sulphuric acid (mist)
United Kingdom	WEL TWA (mg/m <sup>3</sup> )	0,05 mg/m <sup>3</sup>
United Kingdom	Remark (WEL)	The mist is defined as the thoracic fraction
Iceland	Local name	Brennisteinssýra
Iceland	OEL (8 hours ref) (mg/m <sup>3</sup> )	1 mg/m <sup>3</sup>
Norway	Local name	Svovelsyre, inhalerbar fraksjon
Norway	Gjennomsnittsverdier (AN) (mg/m <sup>3</sup> )	0,1 mg/m <sup>3</sup>
Norway	Merknader (NO)	K
Switzerland	Local name	Acide sulfurique
Switzerland	VME (mg/m <sup>3</sup> )	0,1 mg/m <sup>3</sup>
Switzerland	VLE (mg/m <sup>3</sup> )	0,1 mg/m <sup>3</sup>
Switzerland	Remark (CH)	15 min
Australia	Local name	Sulphuric acid
Australia	TWA (mg/m <sup>3</sup> )	1 mg/m <sup>3</sup>
Australia	STEL (mg/m <sup>3</sup> )	3 mg/m <sup>3</sup>
USA - ACGIH	Local name	Sulfuric acid
USA - ACGIH	ACGIH TWA (mg/m <sup>3</sup> )	0,2 mg/m <sup>3</sup>
USA - ACGIH	Remark (ACGIH)	Pulm func
USA - OSHA	Local name	Sulfuric acid
USA - OSHA	OSHA PEL (TWA) (mg/m <sup>3</sup> )	1 mg/m <sup>3</sup>

### 8.2. Exposure controls

Appropriate engineering controls	: Provide adequate general and local exhaust ventilation.
Personal protective equipment	: Protective goggles. Gloves. Avoid all unnecessary exposure.
Hand protection	: Wear protective gloves
Eye protection	: Chemical goggles or safety glasses
Skin and body protection	: Wear suitable protective clothing
Respiratory protection	: Where exposure through inhalation may occur from use, respiratory protection equipment is recommended



Other information : Do not eat, drink or smoke during use.

### SECTION 9: Physical and chemical properties

#### 9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Colour	: Colourless.
Odour	: characteristic.
Odour threshold	: No data available
pH	: No data available
Relative evaporation rate (butylacetate=1)	: No data available
Melting point	: No data available
Freezing point	: No data available
Boiling point	: No data available
Flash point	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: Non flammable
Vapour pressure	: No data available
Relative vapour density at 20 °C	: No data available
Relative density	: No data available
Solubility	: No data available
Log Pow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidising properties	: No data available
Explosive limits	: No data available

#### 9.2. Other information

No additional information available

### SECTION 10: Stability and reactivity

#### 10.1. Reactivity

The product is stable at normal handling and storage conditions.

#### 10.2. Chemical stability

Not established.

#### 10.3. Possibility of hazardous reactions

Not established.

#### 10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures.

#### 10.5. Incompatible materials

Strong acids. Strong bases.

#### 10.6. Hazardous decomposition products

Fume. Carbon monoxide. Carbon dioxide.

### SECTION 11: Toxicological information

#### 11.1. Information on toxicological effects

Acute toxicity : Not classified

#### sulphuric acid (7664-93-9)

LD50 oral rat	2140 mg/kg bodyweight (Rat; Equivalent or similar to OECD 401; Experimental value)
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Skin corrosion/irritation : Causes skin irritation.

Serious eye damage/irritation : Causes serious eye irritation.

Respiratory or skin sensitisation	: Not classified Based on available data, the classification criteria are not met
Germ cell mutagenicity	: Not classified Based on available data, the classification criteria are not met
Carcinogenicity	: Not classified Based on available data, the classification criteria are not met
Reproductive toxicity	: Not classified Based on available data, the classification criteria are not met
Specific target organ toxicity (single exposure)	: Not classified Based on available data, the classification criteria are not met
Specific target organ toxicity (repeated exposure)	: Not classified Based on available data, the classification criteria are not met
Aspiration hazard	: Not classified Based on available data, the classification criteria are not met
Potential adverse human health effects and symptoms	: Based on available data, the classification criteria are not met.

### SECTION 12: Ecological information

#### 12.1. Toxicity

sulphuric acid (7664-93-9)	
LC50 fish 1	> mg/l >16 - <28,96 h; Lepomis macrochirus; Pure substance
EC50 Daphnia 1	> 100 mg/l (48 h; Daphnia magna; Pure substance)
Threshold limit algae 1	> 100 mg/l (72 h; Desmodesmus subspicatus; Pure substance)

#### 12.2. Persistence and degradability

Cerium (IV) sulfate 0.1M Volumetric Solution as specified in appendix 1B of the British Pharmacopoeia (BPV 666)	
Persistence and degradability	Not established.
cerium(IV) sulfate (13590-82-4)	
Persistence and degradability	Biodegradability: Not applicable.
Biochemical oxygen demand (BOD)	Not applicable
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable
BOD (% of ThOD)	Not applicable
sulphuric acid (7664-93-9)	
Persistence and degradability	Biodegradability: Not applicable. Hydrolysis in water. Biodegradability in soil: Not applicable. No (test)data available on mobility of the substance.
ThOD	Not applicable
BOD (% of ThOD)	Not applicable

#### 12.3. Bioaccumulative potential

Cerium (IV) sulfate 0.1M Volumetric Solution as specified in appendix 1B of the British Pharmacopoeia (BPV 666)	
Bioaccumulative potential	Not established.
cerium(IV) sulfate (13590-82-4)	
Bioaccumulative potential	Bioaccumulation: No data available.
sulphuric acid (7664-93-9)	
Bioaccumulative potential	Bioaccumulation: Not applicable.

#### 12.4. Mobility in soil

No additional information available

### 12.5. Results of PBT and vPvB assessment

No additional information available

### 12.6. Other adverse effects

Additional information : Avoid release to the environment

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

Waste disposal recommendations : Dispose in a safe manner in accordance with local/national regulations.  
Ecology - waste materials : Avoid release to the environment.  
European List of Waste (LoW) code : 16 05 06\* - laboratory chemicals consisting of or containing dangerous substances including mixtures of laboratory chemicals

## SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

### 14.1. UN number

Not dangerous goods in terms of transport regulations

### 14.2. UN proper shipping name

Proper Shipping Name (ADR) : Not applicable  
Proper Shipping Name (IMDG) : Not applicable  
Proper Shipping Name (IATA) : Not applicable  
Proper Shipping Name (ADN) : Not applicable  
Proper Shipping Name (RID) : Not applicable

### 14.3. Transport hazard class(es)

#### ADR

Transport hazard class(es) (ADR) : Not applicable

#### IMDG

Transport hazard class(es) (IMDG) : Not applicable

#### IATA

Transport hazard class(es) (IATA) : Not applicable

#### ADN

Transport hazard class(es) (ADN) : Not applicable

#### RID

Transport hazard class(es) (RID) : Not applicable

### 14.4. Packing group

Packing group (ADR) : Not applicable  
Packing group (IMDG) : Not applicable  
Packing group (IATA) : Not applicable  
Packing group (ADN) : Not applicable  
Packing group (RID) : Not applicable

### 14.5. Environmental hazards

Dangerous for the environment : No  
Marine pollutant : No  
Other information : No supplementary information available



### 14.6. Special precautions for user

#### 14.6.1. Overland transport

#### 14.6.2. Transport by sea

#### 14.6.3. Air transport

#### 14.6.4. Inland waterway transport

Carriage prohibited (ADN) : No

Not subject to ADN : No

#### 14.6.5. Rail transport

Carriage prohibited (RID) : No

### 14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

## SECTION 15: Regulatory information

### 15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

#### 15.1.1. EU-Regulations

The following restrictions are applicable according to Annex XVII of the REACH Regulation (EC) No 1907/2006:

3. Liquid substances or mixtures which are regarded as dangerous in accordance with Directive 1999/45/EC or are fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008	Cerium (IV) sulfate 0.1M Volumetric Solution as specified in appendix 1B of the British Pharmacopoeia (BPV 666) - sulphuric acid
3.b. Substances or mixtures fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008: Hazard classes 3.1 to 3.6, 3.7 adverse effects on sexual function and fertility or on development, 3.8 effects other than narcotic effects, 3.9 and 3.10	Cerium (IV) sulfate 0.1M Volumetric Solution as specified in appendix 1B of the British Pharmacopoeia (BPV 666) - cerium(IV) sulfate - sulphuric acid

Contains no substance on the REACH candidate list

Contains no REACH Annex XIV substances

#### 15.1.2. National regulations

##### Germany

Water hazard class (WGK) : 1 - low hazard to waters

WGK remark : Classification water polluting based on the components in compliance with Verwaltungsvorschrift wassergefährdender Stoffe (VwVwS) of 27 July 2005 (Anhang 4)

### 15.2. Chemical safety assessment

No chemical safety assessment has been carried out

## SECTION 16: Other information

Data sources : REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.

Other information : None.

Full text of R-, H- and EUH-statements:

Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
Ox. Sol. 3	Oxidising Solids, Category 3
Skin Corr. 1A	Skin corrosion/irritation, Category 1A
Skin Irrit. 2	Skin corrosion/irritation, Category 2
STOT SE 3	Specific target organ toxicity — Single exposure, Category 3, Respiratory tract irritation
H272	May intensify fire; oxidiser
H314	Causes severe skin burns and eye damage
H315	Causes skin irritation
H319	Causes serious eye irritation
H335	May cause respiratory irritation
R35	Causes severe burns



# Cerium (IV) sulfate 0.1M Volumetric Solution as specified in appendix 1B of the British Pharmacopoeia (BPV 666)

## Safety Data Sheet

according to Regulation (EC) No. 453/2010

[WWW.FASTMSDS.COM](http://WWW.FASTMSDS.COM)

R36/37/38	Irritating to eyes, respiratory system and skin
R36/38	Irritating to eyes and skin
R8	Contact with combustible material may cause fire
C	Corrosive
O	Oxidising
Xi	Irritant

SDS EU Mod H F (REACH ANNEX II)

*This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.*