

## Safety Data Sheet

according to Regulation (EC) No 1907/2006

### Combined copper solution suitable for determination of residual glucose in sugar alcohols

Revision date: 16.09.2022

Product code: 03042

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

### 1.1. Product identifier

Combined copper solution suitable for determination of residual glucose in sugar alcohols

UFI: Y6E8-U0EN-200F-2M5F

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

#### Use of the substance/mixture

Laboratory chemicals

Industrial uses: Uses of substances as such or in preparations at industrial sites

Professional uses: Public domain (administration, education, entertainment, services, craftsmen)

#### Uses advised against

Do not use for private purposes (household).

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

Company name:	Fa. Bernd Kraft GmbH	
Street:	Stempelstraße 6	
Place:	D-47167 Duisburg	
Telephone:	0203/5194-0	Telefax: 0203/5194-290
e-mail:	info@berndkraft.de	
Contact person:	Abteilung Produktsicherheit	Telephone: 0203/5194-107/117
e-mail:	produktsicherheit@berndkraft.de	
Internet:	www.berndkraft.de	
Responsible Department:	Abteilung Produktsicherheit	

### 1.4. Emergency telephone number:

For Hazardous Materials [or Dangerous Goods] Incidents Spill, Leak, Fire, Exposure, or Accident Call CHEMTREC Day or Night Within USA and Canada: 1-800-424-9300 Outside USA and Canada: +1 703-741-5970 (collect calls accepted)

### Further Information

This product is a mixture. REACH Registration Number see section 3.

## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

#### Regulation (EC) No 1272/2008

Skin Irrit. 2; H315

Eye Dam. 1; H318

STOT RE 2; H373

Aquatic Chronic 2; H411

Full text of hazard statements: see SECTION 16.

### 2.2. Label elements

#### Regulation (EC) No 1272/2008

#### Hazard components for labelling

potassium iodide

copper sulphate

potassium hydroxide

Signal word: Danger

#### Pictograms:



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**Hazard statements**

- H315 Causes skin irritation.  
 H318 Causes serious eye damage.  
 H373 May cause damage to organs through prolonged or repeated exposure.  
 H411 Toxic to aquatic life with long lasting effects.

**Precautionary statements**

- P260 Do not breathe dust/fume/gas/mist/vapours/spray.  
 P273 Avoid release to the environment.  
 P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.  
 P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
 P310 Immediately call a POISON CENTER/doctor.  
 P391 Collect spillage.

**2.3. Other hazards**

No data available

**SECTION 3: Composition/information on ingredients**

**3.2. Mixtures**

**Chemical characterization**

Mixtures in aqueous solution

**Hazardous components**

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	Classification (Regulation (EC) No 1272/2008)			
6487-48-5	di-Potassium oxalate monohydrate			5 - < 10 %
	209-506-8	607-007-00-3		
	Acute Tox. 4, Acute Tox. 4; H312 H302			
584-08-7	potassium carbonate			5 - < 10 %
	209-529-3		01-2119532646-36	
	Skin Irrit. 2, Eye Irrit. 2, STOT SE 3; H315 H319 H335			
7681-11-0	potassium iodide			1 - < 5 %
	231-659-4		01-2119906339-35	
	STOT RE 1; H372			
7758-98-7	copper sulphate			1 - < 5 %
	231-847-6	029-004-00-0		
	Acute Tox. 4, Skin Irrit. 2, Eye Dam. 1, Aquatic Acute 1, Aquatic Chronic 1; H302 H315 H318 H400 H410			
1310-58-3	potassium hydroxide			< 1 %
	215-181-3	019-002-00-8	01-2119487136-33	
	Met. Corr. 1, Acute Tox. 4, Skin Corr. 1A; H290 H302 H314			

Full text of H and EUH statements: see section 16.

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**Specific Conc. Limits, M-factors and ATE**

CAS No	EC No	Chemical name	Quantity
		Specific Conc. Limits, M-factors and ATE	
6487-48-5	209-506-8	di-Potassium oxalate monohydrate	5 - < 10 %
		dermal: ATE = 1100 mg/kg; oral: ATE = 500 mg/kg	
584-08-7	209-529-3	potassium carbonate	5 - < 10 %
		dermal: LD50 = > 2000 mg/kg; oral: LD50 = > 2000 mg/kg	
7681-11-0	231-659-4	potassium iodide	1 - < 5 %
		oral: LD50 = 3118 mg/kg	
7758-98-7	231-847-6	copper sulphate	1 - < 5 %
		dermal: LD50 = > 2000 mg/kg; oral: LD50 = 482 mg/kg M acute; H400: M=10 M chron.; H410: M=10	
1310-58-3	215-181-3	potassium hydroxide	< 1 %
		oral: LD50 = 333 mg/kg Skin Corr. 1A; H314: >= 5 - 100 Skin Corr. 1B; H314: >= 2 - < 5 Skin Irrit. 2; H315: >= 0,5 - < 2 Eye Irrit. 2; H319: >= 0,5 - < 2	

**Further Information**

This product does not contain substances of very high concern according to Regulation (EC) No 1907/2006 (REACH), Article 57 above the respective regulatory concentration limit of = 0.1 % (w/w).

**SECTION 4: First aid measures**

**4.1. Description of first aid measures**

**General information**

No data available

**After inhalation**

Provide fresh air.

Call a doctor if you feel unwell.

**After contact with skin**

Wash immediately with: Water

Take off immediately all contaminated clothing and wash it before reuse.

Call a physician immediately.

**After contact with eyes**

In case of contact with eyes flush immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart and consult an ophthalmologist.

Remove contact lenses, if present and easy to do. Continue rinsing.

Protect uninjured eye.

**After ingestion**

Rinse mouth immediately and drink plenty of water.

Call a physician immediately.

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

Irritant

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

No data available

**SECTION 5: Firefighting measures**

**5.1. Extinguishing media**

**Suitable extinguishing media**

Co-ordinate fire-fighting measures to the fire surroundings.

**Unsuitable extinguishing media**

no restriction

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

Non-combustible liquids  
Hazardous combustion products  
In case of fire may be liberated:  
Sulphur oxides  
Metal oxide smoke, toxic

**5.3. Advice for firefighters**

In case of fire: Wear self-contained breathing apparatus.  
In case of fire and/or explosion do not breathe fumes.  
Avoid contact with skin, eyes and clothes.

**Additional information**

Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.  
Move undamaged containers from immediate hazard area if it can be done safely.  
Use water spray jet to protect personnel and to cool endangered containers.

**SECTION 6: Accidental release measures**

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

**For non-emergency personnel**

Provide adequate ventilation.  
Use personal protection equipment.  
Avoid contact with skin, eyes and clothes.  
Remove persons to safety.  
Emergency procedures  
Do not breathe dust/fume/gas/mist/vapours/spray.

**For emergency responders**

Precautionary statements For emergency responders : Personal protection equipment: see section 8

**6.2. Environmental precautions**

Do not allow to enter into surface water or drains.

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

**For containment**

Cover drains.  
Prevent spread over a wide area (e.g. by containment or oil barriers).  
Collect in closed and suitable containers for disposal.  
Absorb with liquid-binding material (sand, diatomaceous earth, acid- or universal binding agents).

**For cleaning up**

Clean contaminated articles and floor according to the environmental legislation.

**Other information**

Provide adequate ventilation.  
Do not breathe dust/fume/gas/mist/vapours/spray.  
Wear breathing apparatus if exposed to vapours/dusts/aerosols.

**6.4. Reference to other sections**

Safe handling: see section 7  
Personal protection equipment: see section 8  
Disposal: see section 13

**SECTION 7: Handling and storage**

**7.1. Precautions for safe handling**

**Advice on safe handling**

Read label before use. Handle and open container with care.  
When using do not eat, drink, smoke, sniff. Use personal protection equipment.  
Provide adequate ventilation. Avoid contact with skin, eyes and clothes.

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Do not breathe vapour/aerosol.

**Advice on protection against fire and explosion**

Usual measures for fire prevention.

**Advice on general occupational hygiene**

Keep away from food, drink and animal feedingstuffs. Remove contaminated, saturated clothing immediately. Draw up and observe skin protection programme. Wash hands and face before breaks and after work and take a shower if necessary. When using do not eat or drink. Avoid: aerosol or mist formation Do not breathe vapour/aerosol.

**Further information on handling**

Draw up and observe skin protection programme. Wash hands and face before breaks and after work and take a shower if necessary. Take off immediately all contaminated clothing and wash it before reuse.

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

**Requirements for storage rooms and vessels**

Keep container tightly closed.

**Further information on storage conditions**

Keep container dry.

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

Laboratory chemicals

**SECTION 8: Exposure controls/personal protection**

**8.1. Control parameters**

**Occupational exposure limits**

CAS No	Substance	ppm	mg/m <sup>3</sup>	fib/cm <sup>3</sup>	Category	Origin
1310-58-3	Potassium hydroxide	-	2		STEL (15 min)	

**DNEL/DMEL values**

CAS No	Substance	Exposure route	Effect	Value
584-08-7	potassium carbonate			
	Worker DNEL, long-term	inhalation	local	10 mg/m <sup>3</sup>
	Worker DNEL, long-term	dermal	local	16 mg/cm <sup>2</sup>
	Consumer DNEL, long-term	inhalation	local	10 mg/m <sup>3</sup>
	Consumer DNEL, long-term	dermal	local	8 mg/cm <sup>2</sup>
1310-58-3	potassium hydroxide			
	Worker DNEL, long-term	inhalation	local	1 mg/m <sup>3</sup>
	Consumer DNEL, long-term	inhalation	local	1 mg/m <sup>3</sup>

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**PNEC values**

CAS No	Substance	Value
Environmental compartment		
7758-98-7	copper sulphate	
Freshwater		0,0078 mg/l
Marine water		0,0052 mg/l
Freshwater sediment		87 mg/kg
Marine sediment		676 mg/kg
Micro-organisms in sewage treatment plants (STP)		0,23 mg/l
Soil		65 mg/kg

**8.2. Exposure controls**

**Appropriate engineering controls**

Technical measures and the application of suitable work processes have priority over personal protection equipment.

If handled uncovered, arrangements with local exhaust ventilation have to be used.

**Individual protection measures, such as personal protective equipment**

**Eye/face protection**

goggles

**Hand protection**

Protective gloves are recommended Company KCL GmbH, D-36124 Eichenzell, email: [vertrieb@kcl.de](mailto:vertrieb@kcl.de) With specification (test according to EN374):

By long-term hand contact

Recommended glove articles: KCL 741 Dermatril® L

Recommended material: NBR (Nitrile rubber) 0,11 mm

Wearing time with permanent contact: > 480 min

By short-term hand contact

Recommended glove articles: KCL 741 Dermatril® L

Recommended material: NBR (Nitrile rubber) 0,11 mm

Wearing time with occasional contact (splashes): > 480 min

The breakthrough times stated above were determined by KCL in laboratory tests acc. to EN374 with samples of the recommended glove types. This recommendation applies only to the product stated in the safety data sheet supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: [www.kcl.de](http://www.kcl.de)).

**Skin protection**

Wear suitable protective clothing. Take off immediately all contaminated clothing.

Wash hands before breaks and after work.

**Respiratory protection**

Respiratory protection necessary at: aerosol or mist formation

**Environmental exposure controls**

Do not allow to enter into surface water or drains.

**SECTION 9: Physical and chemical properties**

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

Physical state: Liquid  
Colour: blue

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Odour:	odourless	
Odour threshold:	No data available	
Melting point/freezing point:		No data available
Boiling point or initial boiling point and boiling range:		No data available
Flammability		
Solid/liquid:		No data available
Gas:		No data available
Lower explosion limits:		No data available
Upper explosion limits:		No data available
Flash point:		No data available
Auto-ignition temperature:		No data available
Decomposition temperature:		No data available
pH-Value:		11,0
Viscosity / kinematic:		No data available
Water solubility:		completely miscible
Solubility in other solvents		
No data available		
Dissolution rate:		No data available
Partition coefficient n-octanol/water:		No data available
Dispersion stability:		No data available
Vapour pressure:		No data available
Vapour pressure:		No data available
Density:		1,2135 g/cm <sup>3</sup>
Relative density:		No data available
Bulk density:		No data available
Relative vapour density:		No data available
Particle characteristics:		No data available

**9.2. Other information**

**Information with regard to physical hazard classes**

Explosive properties		
No data available		
Sustaining combustion:		No data available
Self-ignition temperature		
Solid:		No data available
Gas:		No data available
Oxidizing properties		
Oxidizing		

**Other safety characteristics**

Evaporation rate:		No data available
Solvent separation test:		No data available
Solvent content:		No data available
Solid content:		0
Sublimation point:		No data available
Softening point:		No data available
Pour point:		No data available
No data available:		
Viscosity / dynamic:		No data available
Flow time:		No data available

**SECTION 10: Stability and reactivity**

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**10.1. Reactivity**

No data available

**10.2. Chemical stability**

The product is stable under storage at normal ambient temperatures.

**10.3. Possibility of hazardous reactions**

No data available

**10.4. Conditions to avoid**

No data available

**10.5. Incompatible materials**

No data available

**10.6. Hazardous decomposition products**

In case of fire may be liberated:

SECTION 5: Firefighting measures

**Further information**

No data available

**SECTION 11: Toxicological information**

**11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008**

**Toxicokinetics, metabolism and distribution**

There are no data available on the preparation/mixture itself.

**Acute toxicity**

Based on available data, the classification criteria are not met.

CAS No	Chemical name				
	Exposure route	Dose	Species	Source	Method
6487-48-5	di-Potassium oxalate monohydrate				
	oral	ATE 500 mg/kg			
	dermal	ATE 1100 mg/kg			
584-08-7	potassium carbonate				
	oral	LD50 > 2000 mg/kg	Rat	Study report (1984)	OECD Guideline 401
	dermal	LD50 > 2000 mg/kg	Rabbit	Study report (1993)	other: US EPA Pesticide Assessment Guide
7681-11-0	potassium iodide				
	oral	LD50 3118 mg/kg	Rat	Study report (1980)	OECD Guideline 401
7758-98-7	copper sulphate				
	oral	LD50 482 mg/kg	Rat	Study report (1994)	OECD Guideline 401
	dermal	LD50 > 2000 mg/kg	Rat	Study report (1993)	OECD Guideline 402
1310-58-3	potassium hydroxide				
	oral	LD50 333 mg/kg	Rat	Fund. Appl. Toxicol., 8, 97-100 (1987)	OECD Guideline 425



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**Irritation and corrosivity**

Causes skin irritation.  
Causes serious eye damage.

**Sensitising effects**

Based on available data, the classification criteria are not met.

**Carcinogenic/mutagenic/toxic effects for reproduction**

Based on available data, the classification criteria are not met.

**STOT-single exposure**

Based on available data, the classification criteria are not met.

**STOT-repeated exposure**

May cause damage to organs through prolonged or repeated exposure. (potassium iodide)

**Aspiration hazard**

Based on available data, the classification criteria are not met.

**Information on likely routes of exposure**

There are no data available on the preparation/mixture itself.

**Specific effects in experiment on an animal**

There are no data available on the preparation/mixture itself.

**Additional information on tests**

There are no data available on the preparation/mixture itself.

**Practical experience**

There are no data available on the preparation/mixture itself.

**11.2. Information on other hazards**

**Endocrine disrupting properties**

There are no data available on the preparation/mixture itself.

**Other information**

There are no data available on the preparation/mixture itself.

**Further information**

Irritant

**SECTION 12: Ecological information**

**12.1. Toxicity**

There are no data available on the mixture itself.

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CAS No	Chemical name					
	Aquatic toxicity	Dose	[h]   [d]	Species	Source	Method
584-08-7	potassium carbonate					
	Acute fish toxicity	LC50 68 mg/l	96 h	Oncorhynchus mykiss	Study report (1994)	other: FIFRA Guideline 72-1
	Acute crustacea toxicity	EC50 200 mg/l	48 h	Daphnia pulex	Study report (1994)	other: FIFRA Guideline 72-1
7681-11-0	potassium iodide					
	Acute fish toxicity	LC50 3780 mg/l	96 h	Oncorhynchus mykiss	Publication (1995)	other: Protocol to d
	Acute crustacea toxicity	EC50 1,27 mg/l	48 h	Daphnia magna	Study report (2012)	OECD Guideline 202
7758-98-7	copper sulphate					
	Acute fish toxicity	LC50 0,193 mg/l	96 h	Pimephales promelas	Study report (1996)	measurements were conducted by standard
	Acute algae toxicity	ErC50 0,152 mg/l	72 h	Pseudokirchneriella subcapitata	Publication (2005)	OECD Guideline 201
	Acute crustacea toxicity	EC50 0,007 mg/l	48 h	Daphnia magna	Study report (1978)	- Test were conducted on Daphnia magna t
	Fish toxicity	NOEC 0,123 mg/l	12 d	Atherinops affinis	Mar. Environ. Res. 31: 17-35 (1991)	Three tests are reported, designed to de
	Algae toxicity	NOEC 0,0102 mg/l	19 d	other aquatic plant: giant kelp Macrocystis pyrifera	Mar. Ecol. Prog. Ser. 68: 147 - 156 (199)	Tests were conducted to determine the ef
	Crustacea toxicity	NOEC 0,033 mg/l	14 d	Penaeus mergulensis and Penaeus monodon	Bull. Environ. Contain. Toxicol. (1995)	The effects of dissolved copper on the g

**12.2. Persistence and degradability**

There are no data available on the mixture itself.

**12.3. Bioaccumulative potential**

There are no data available on the mixture itself.

**BCF**

CAS No	Chemical name	BCF	Species	Source
7758-98-7	copper sulphate	0,02 - 20	Crangon crangon	Symp. Biologica. Hun

**12.4. Mobility in soil**

There are no data available on the mixture itself.

**12.5. Results of PBT and vPvB assessment**

The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.

There are no data available on the mixture itself.

**12.6. Endocrine disrupting properties**

This product does not contain a substance that has endocrine disrupting properties with respect to non-target organisms as no components meets the criteria.

There are no data available on the mixture itself.

**12.7. Other adverse effects**

There are no data available on the mixture itself.

**Further information**

Do not allow to enter into surface water or drains.

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Discharge into the environment must be avoided.

**SECTION 13: Disposal considerations**

**13.1. Waste treatment methods**

**Disposal recommendations**

Waste disposal according to directive 2008/98/EC, covering waste and dangerous waste.  
Send to a physico-chemical treatment facility under observation of official regulations.  
Do not mix with other wastes.  
Do not empty into drains.

**Contaminated packaging**

Handle contaminated packages in the same way as the substance itself.  
The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process.

**SECTION 14: Transport information**

**Land transport (ADR/RID)**

**14.1. UN number or ID number:** UN 3082  
**14.2. UN proper shipping name:** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (copper sulphate)  
**14.3. Transport hazard class(es):** 9  
**14.4. Packing group:** III  
Hazard label: 9  
Classification code: M6  
Special Provisions: 274 335 375 601  
Limited quantity: 5 L  
Excepted quantity: E1  
Transport category: 3  
Hazard No: 90  
Tunnel restriction code: -

**Inland waterways transport (ADN)**

**14.1. UN number or ID number:** UN 3082  
**14.2. UN proper shipping name:** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (copper sulphate)  
**14.3. Transport hazard class(es):** 9  
**14.4. Packing group:** III  
Hazard label: 9  
Classification code: M6  
Special Provisions: 274 335 375 601  
Limited quantity: 5 L  
Excepted quantity: E1

**Marine transport (IMDG)**

**14.1. UN number or ID number:** UN 3082  
**14.2. UN proper shipping name:** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (copper sulphate)  
**14.3. Transport hazard class(es):** 9  
**14.4. Packing group:** III  
Hazard label: 9  
Special Provisions: 274, 335, 969  
Limited quantity: 5 L  
Excepted quantity: E1  
EmS: F-A, S-F

**Air transport (ICAO-TI/IATA-DGR)**

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**14.1. UN number or ID number:** UN 3082  
**14.2. UN proper shipping name:** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (copper sulphate)  
**14.3. Transport hazard class(es):** 9  
**14.4. Packing group:** III  
Hazard label: 9  
Special Provisions: A97 A158 A197  
Limited quantity Passenger: 30 kg G  
Passenger LQ: Y964  
Excepted quantity: E1  
IATA-packing instructions - Passenger: 964  
IATA-max. quantity - Passenger: 450 L  
IATA-packing instructions - Cargo: 964  
IATA-max. quantity - Cargo: 450 L

**14.5. Environmental hazards**

ENVIRONMENTALLY HAZARDOUS: Yes  
Danger releasing substance: copper sulphate

**SECTION 15: Regulatory information**

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

**EU regulatory information**

Restrictions on use (REACH, annex XVII):  
Entry 75  
Information according to 2012/18/EU (SEVESO III): E2 Hazardous to the Aquatic Environment

**National regulatory information**

Employment restrictions: Observe restrictions to employment for juveniles according to the 'juvenile work protection guideline' (94/33/EC).  
Water hazard class (D): 3 - highly hazardous to water

**SECTION 16: Other information**

**Classification for mixtures and used evaluation method according to Regulation (EC) No 1272/2008 [CLP]**

Classification	Classification procedure
Skin Irrit. 2; H315	Calculation method
Eye Dam. 1; H318	Calculation method
STOT RE 2; H373	Calculation method
Aquatic Chronic 2; H411	Calculation method

**Relevant H and EUH statements (number and full text)**

H290 May be corrosive to metals.  
H302 Harmful if swallowed.  
H312 Harmful in contact with skin.  
H314 Causes severe skin burns and eye damage.  
H315 Causes skin irritation.  
H318 Causes serious eye damage.  
H319 Causes serious eye irritation.  
H335 May cause respiratory irritation.  
H372 Causes damage to organs (thyroid gland) through prolonged or repeated exposure if swallowed.  
H373 May cause damage to organs through prolonged or repeated exposure.  
H400 Very toxic to aquatic life.

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H410 Very toxic to aquatic life with long lasting effects.  
H411 Toxic to aquatic life with long lasting effects.

#### Further Information

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material. The information is based on the present level of our knowledge. It does not, however, give assurance of product properties and establishes no contract legal rights.  
The receiver of our product is singularly responsible for adhering to existing laws and regulations.

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*(The data for the hazardous ingredients were taken respectively from the last version of the sub-contractor's safety data sheet.)*