



## SAFETY DATA SHEET

### Freedom Cav

According to Regulation (EC) No 1907/2006, Annex II, as amended. Commission Regulation (EU) No 2015/830 of 28 May 2015.

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

##### 1.1. Product identifier

Product name Freedom Cav

Product number 241801

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

Identified uses Embalming Chemical

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

Supplier The MazWell Group Ltd.  
Units 11/14-15 Ardglan Industrial Estate,  
Whitchurch, Hampshire,  
RG28 7BB, United Kingdom  
+44 (0)1256-893883  
+44 (0)1256-893868  
enquiries@themazwellgroup.com

##### 1.4. Emergency telephone number

Emergency telephone +44 (0)1256 893883 (Mon- Fri 9:00 am - 4:30 pm)

#### SECTION 2: Hazards identification

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

###### Classification (EC 1272/2008)

Physical hazards Flam. Liq. 2 - H225

Health hazards Eye Dam. 1 - H318 STOT SE 3 - H336

Environmental hazards Aquatic Chronic 3 - H412

##### 2.2. Label elements

###### Hazard pictograms



Signal word

Danger

###### Hazard statements

H225 Highly flammable liquid and vapour.  
H318 Causes serious eye damage.  
H336 May cause drowsiness or dizziness.  
H412 Harmful to aquatic life with long lasting effects.

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<b>Precautionary statements</b>	<p>P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.</p> <p>P261 Avoid breathing vapour/ spray.</p> <p>P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.</p> <p>P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.</p> <p>P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.</p> <p>P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.</p> <p>P310 Immediately call a POISON CENTER/ doctor.</p> <p>P403+P233 Store in a well-ventilated place. Keep container tightly closed.</p> <p>P501 Dispose of contents/ container in accordance with national regulations.</p>
<b>Contains</b>	Propan-2-ol, Aluminum chloride, basic
<b>Supplementary precautionary statements</b>	<p>P240 Ground and bond container and receiving equipment.</p> <p>P241 Use explosion-proof electrical equipment.</p> <p>P242 Use non-sparking tools.</p> <p>P243 Take action to prevent static discharges.</p> <p>P271 Use only outdoors or in a well-ventilated area.</p> <p>P312 Call a POISON CENTRE/doctor if you feel unwell.</p> <p>P370+P378 In case of fire: Use foam, carbon dioxide, dry powder or water fog to extinguish.</p> <p>P403+P235 Store in a well-ventilated place. Keep cool.</p> <p>P405 Store locked up.</p>

### 2.3. Other hazards

This product does not contain any substances classified as PBT or vPvB.

## SECTION 3: Composition/information on ingredients

### 3.2. Mixtures

<b>Propan-2-ol</b>		<b>25 - &lt;50%</b>
CAS number: 67-63-0	EC number: 200-661-7	REACH registration number: 01-2119457558-25-XXXX
<b>Classification</b>		
Flam. Liq. 2 - H225		
Eye Irrit. 2 - H319		
STOT SE 3 - H336		
<b>Aluminum chloride, basic</b>		<b>10 - &lt;25%</b>
CAS number: 1327-41-9	EC number: 215-477-2	
<b>Classification</b>		
Met. Corr. 1 - H290		
Eye Dam. 1 - H318		

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<b>Quaternary ammonium compounds, benzyl-C12-16-alkyldimethyl, chlorides</b> <span style="float: right;"><b>0.5 - &lt;1%</b></span>
CAS number: 68424-85-1                      EC number: 270-325-2 M factor (Acute) = 10                      M factor (Chronic) = 1
<b>Classification</b> Acute Tox. 4 - H302 Skin Corr. 1C - H314 Eye Dam. 1 - H318 Aquatic Acute 1 - H400 Aquatic Chronic 1 - H410
<b>Ethanol</b> <span style="float: right;"><b>0.025 - &lt;0.25%</b></span>
CAS number: 64-17-5                      EC number: 200-578-6
<b>Classification</b> Flam. Liq. 2 - H225 Eye Irrit. 2 - H319
<b>Amines, C12-16-alkyldimethyl</b> <span style="float: right;"><b>0.025 - &lt;0.25%</b></span>
CAS number: 68439-70-3                      EC number: 270-414-6 M factor (Acute) = 100                      M factor (Chronic) = 1
<b>Classification</b> Acute Tox. 4 - H302 Skin Corr. 1B - H314 Eye Dam. 1 - H318 Aquatic Acute 1 - H400 Aquatic Chronic 1 - H410

The full text for all hazard statements is displayed in Section 16.

### SECTION 4: First aid measures

#### 4.1. Description of first aid measures

<b>General information</b>	If in doubt, get medical attention promptly.
<b>Inhalation</b>	Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. Get medical attention if any discomfort continues.
<b>Ingestion</b>	Rinse mouth thoroughly with water. Give a few small glasses of water or milk to drink. Get medical attention if any discomfort continues.
<b>Skin contact</b>	Wash skin thoroughly with soap and water. Wash contaminated clothing before reuse. Get medical attention if irritation persists after washing.
<b>Eye contact</b>	Remove any contact lenses and open eyelids wide apart. Rinse with water. Continue to rinse for at least 10 minutes. Get medical attention promptly if symptoms occur after washing.

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

<b>General information</b>	The severity of the symptoms described will vary dependent on the concentration and the length of exposure.
<b>Inhalation</b>	Vapours may cause headache, fatigue, dizziness and nausea.

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<b>Ingestion</b>	Dryness of mouth and throat. May cause discomfort if swallowed.
<b>Skin contact</b>	Dryness and/or cracking.
<b>Eye contact</b>	Causes serious eye damage.

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

<b>Notes for the doctor</b>	Treat symptomatically.
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## **SECTION 5: Firefighting measures**

### **5.1. Extinguishing media**

**Suitable extinguishing media** Extinguish with alcohol-resistant foam, carbon dioxide, dry powder or water fog.

**Unsuitable extinguishing media** Do not use water jet as an extinguisher, as this will spread the fire.

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

**Hazardous combustion products** Carbon dioxide (CO<sub>2</sub>). Carbon monoxide (CO).

### **5.3. Advice for firefighters**

**Protective actions during firefighting** Avoid breathing fire gases or vapours. Cool containers exposed to heat with water spray and remove them from the fire area if it can be done without risk. Cool containers exposed to flames with water until well after the fire is out.

**Special protective equipment for firefighters** Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing.

## **SECTION 6: Accidental release measures**

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

**Personal precautions** Avoid inhalation of vapours. Avoid contact with eyes. Wear protective clothing as described in Section 8 of this safety data sheet.

### **6.2. Environmental precautions**

**Environmental precautions** Avoid discharge to the aquatic environment.

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

**Methods for cleaning up** Eliminate all sources of ignition. Provide adequate ventilation. Wear protective clothing as described in Section 8 of this safety data sheet. Absorb spillage with non-combustible, absorbent material. Place waste in labelled, sealed containers. Dispose of contents/container in accordance with national regulations.

### **6.4. Reference to other sections**

**Reference to other sections** For personal protection, see Section 8. See Section 11 for additional information on health hazards. For waste disposal, see Section 13.

## **SECTION 7: Handling and storage**

### **7.1. Precautions for safe handling**

**Usage precautions** Read and follow manufacturer's recommendations. Avoid inhalation of vapours and contact with skin and eyes.

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

**Storage precautions** Store in tightly-closed, original container in a dry, cool and well-ventilated place.

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

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**Specific end use(s)** The identified uses for this product are detailed in Section 1.2.

### SECTION 8: Exposure controls/Personal protection

#### 8.1. Control parameters

##### Occupational exposure limits

##### Propan-2-ol

Long-term exposure limit (8-hour TWA): WEL 400 ppm 999 mg/m<sup>3</sup>

Short-term exposure limit (15-minute): WEL 500 ppm 1250 mg/m<sup>3</sup>

##### Ethanol

Long-term exposure limit (8-hour TWA): WEL 1000 ppm 1920 mg/m<sup>3</sup>

WEL = Workplace Exposure Limit.

#### 8.2. Exposure controls

##### **Appropriate engineering controls**

Observe any occupational exposure limits for the product or ingredients. This product is not to be used under conditions of poor ventilation.

##### **Eye/face protection**

The following protection should be worn: Tight-fitting safety glasses. Personal protective equipment for eye and face protection should comply with European Standard EN166.

##### **Hand protection**

Wear protective gloves. The most suitable glove should be chosen in consultation with the glove supplier/manufacturer, who can provide information about the breakthrough time of the glove material. To protect hands from chemicals, gloves should comply with European Standard EN374.

##### **Other skin and body protection**

Wear suitable protective clothing as protection against splashing or contamination.

##### **Hygiene measures**

Do not eat, drink or smoke when using this product. Provide eyewash station. Wash hands thoroughly after handling. Wash contaminated clothing before reuse. Wash at the end of each work shift and before eating, smoking and using the toilet.

##### **Respiratory protection**

Respiratory protection must be used if the airborne contamination exceeds the recommended occupational exposure limit. Ensure all respiratory protective equipment is suitable for its intended use and is 'CE'-marked.

##### **Environmental exposure controls**

Keep container tightly sealed when not in use.

### SECTION 9: Physical and chemical properties

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

<b>Appearance</b>	Liquid.
<b>Colour</b>	Straw.
<b>Odour</b>	Apple.
<b>Odour threshold</b>	Not available.
<b>pH</b>	Not available.
<b>Melting point</b>	Not available.
<b>Initial boiling point and range</b>	63-66°C @ 760 mm Hg
<b>Flash point</b>	12°C Tag closed cup.
<b>Evaporation rate</b>	> 1 (butyl acetate = 1)
<b>Flammability (solid, gas)</b>	Flammable liquid and vapour.

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<b>Upper/lower flammability or explosive limits</b>	Lower flammable/explosive limit: 6% Upper flammable/explosive limit: 36.5
<b>Vapour pressure</b>	Not available.
<b>Vapour density</b>	> 1
<b>Relative density</b>	0.965-0.975 @ 20°C
<b>Solubility(ies)</b>	Slightly soluble in water.
<b>Partition coefficient</b>	Not available.
<b>Auto-ignition temperature</b>	Not available.
<b>Decomposition Temperature</b>	Not available.
<b>Viscosity</b>	Not available.
<b>Explosive properties</b>	Not considered to be explosive.
<b>Oxidising properties</b>	Does not meet the criteria for classification as oxidising.
<b>9.2. Other information</b>	
<b>Other information</b>	No information required.
<b>Volatility</b>	90%

### SECTION 10: Stability and reactivity

#### 10.1. Reactivity

**Reactivity** See the other subsections of this section for further details.

#### 10.2. Chemical stability

**Stability** Stable at normal ambient temperatures and when used as recommended.

#### 10.3. Possibility of hazardous reactions

**Possibility of hazardous reactions** In use may form flammable/explosive vapour-air mixture. Reactions with the following materials may generate heat: Oxidising agents.

#### 10.4. Conditions to avoid

**Conditions to avoid** Keep away from heat, sparks and open flame.

#### 10.5. Incompatible materials

**Materials to avoid** Oxidising agents.

#### 10.6. Hazardous decomposition products

**Hazardous decomposition products** Does not decompose when used and stored as recommended.

### SECTION 11: Toxicological information

#### 11.1. Information on toxicological effects

##### Acute toxicity - oral

**Notes (oral LD<sub>50</sub>)** Based on available data the classification criteria are not met.

##### Acute toxicity - dermal

**Notes (dermal LD<sub>50</sub>)** Based on available data the classification criteria are not met.

##### Acute toxicity - inhalation

**Notes (inhalation LC<sub>50</sub>)** Based on available data the classification criteria are not met.

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### Skin corrosion/irritation

**Animal data** Based on available data the classification criteria are not met.

### Serious eye damage/irritation

**Serious eye damage/irritation** Causes serious eye damage.

### Respiratory sensitisation

**Respiratory sensitisation** Based on available data the classification criteria are not met.

### Skin sensitisation

**Skin sensitisation** Based on available data the classification criteria are not met.

### Germ cell mutagenicity

**Genotoxicity - in vitro** Based on available data the classification criteria are not met.

### Carcinogenicity

**Carcinogenicity** Based on available data the classification criteria are not met.

### Reproductive toxicity

**Reproductive toxicity - fertility** Based on available data the classification criteria are not met.

**Reproductive toxicity - development** Based on available data the classification criteria are not met.

### Specific target organ toxicity - single exposure

**STOT - single exposure** STOT SE 3 - H336 May cause drowsiness or dizziness.

### Specific target organ toxicity - repeated exposure

**STOT - repeated exposure** Based on available data the classification criteria are not met.

### Aspiration hazard

**Aspiration hazard** Based on available data the classification criteria are not met.

### Toxicological information on ingredients.

#### Propan-2-ol

##### Acute toxicity - oral

**Acute toxicity oral (LD<sub>50</sub> mg/kg)** 5,840.0

**Species** Rat

**Notes (oral LD<sub>50</sub>)** REACH dossier information.

**ATE oral (mg/kg)** 5,840.0

##### Skin corrosion/irritation

**Animal data** Primary dermal irritation index: 0 REACH dossier information.

##### Serious eye damage/irritation

**Serious eye damage/irritation** Dose: 0.1 ml, 1 second, Rabbit REACH dossier information. Irritating.

##### Skin sensitisation

**Skin sensitisation** Buehler test - Guinea pig: Not sensitising. REACH dossier information.

##### Germ cell mutagenicity

**Genotoxicity - in vitro** Gene mutation: Negative. REACH dossier information.

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<b>Genotoxicity - in vivo</b>	Chromosome aberration: Negative. REACH dossier information.
<b><u>Carcinogenicity</u></b>	
<b>Carcinogenicity</b>	NOEL 5000 ppm, Inhalation, Rat REACH dossier information.
<b>IARC carcinogenicity</b>	IARC Group 3 Not classifiable as to its carcinogenicity to humans.
<b><u>Specific target organ toxicity - single exposure</u></b>	
<b>STOT - single exposure</b>	STOT SE 3 - H336 May cause drowsiness or dizziness.
<b>Target organs</b>	Central nervous system
<b><u>Specific target organ toxicity - repeated exposure</u></b>	
<b>STOT - repeated exposure</b>	NOAEC 5000 ppm, Inhalation, Rat REACH dossier information.

### Aluminum chloride, basic

#### Acute toxicity - oral

**Notes (oral LD<sub>50</sub>)** LD<sub>50</sub> >2000 mg/kg, Oral, Rat REACH dossier information. Based on available data the classification criteria are not met.

#### Acute toxicity - dermal

**Notes (dermal LD<sub>50</sub>)** LD<sub>50</sub> >2000 mg/kg, Dermal, Rat REACH dossier information. Based on available data the classification criteria are not met.

#### Acute toxicity - inhalation

**Notes (inhalation LC<sub>50</sub>)** LD<sub>50</sub> >5 mg/l, Inhalation, Rat REACH dossier information. Based on available data the classification criteria are not met.

#### Skin corrosion/irritation

**Animal data** Dose: 0.5 mL, 4 hours, Rabbit Erythema/eschar score: No erythema (0). Oedema score: No oedema (0). Primary dermal irritation index: 0 REACH dossier information. Based on available data the classification criteria are not met.

#### Serious eye damage/irritation

**Serious eye damage/irritation** Causes serious eye damage.

#### Skin sensitisation

**Skin sensitisation** Guinea pig maximization test (GPMT) - Guinea pig: Not sensitising. REACH dossier information. Based on available data the classification criteria are not met.

#### Germ cell mutagenicity

**Genotoxicity - in vitro** Chromosome aberration: Negative. REACH dossier information. Based on available data the classification criteria are not met.

#### Reproductive toxicity

**Reproductive toxicity - fertility** Screening - NOAEL 1000 mg/kg/day, Oral, Rat P REACH dossier information. Based on available data the classification criteria are not met.

**Reproductive toxicity - development** Developmental toxicity: - NOAEL: 3225 mg/kg/day, Oral, Rat REACH dossier information. Based on available data the classification criteria are not met.

## SECTION 12: Ecological information

### 12.1. Toxicity



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**Toxicity** No negative effects on the aquatic environment are known. However, large or frequent spills may have hazardous effects on the environment.

### Ecological information on ingredients.

#### Propan-2-ol

**Toxicity** No negative effects on the aquatic environment are known.

**Acute aquatic toxicity**

**Acute toxicity - fish** LC<sub>50</sub>, 96 hours: 10000 mg/l, Pimephales promelas (Fat-head Minnow)  
REACH dossier information.

**Acute toxicity - aquatic invertebrates** LC<sub>50</sub>, 24 hours: > 10000 mg/l, Daphnia magna  
REACH dossier information.

**Acute toxicity - aquatic plants** Toxicity threshold, 7 days: 1800 mg/l, Scenedesmus quadricauda  
REACH dossier information.

#### Aluminum chloride, basic

**Toxicity** Aquatic toxicity is unlikely to occur. Based on available data the classification criteria are not met.

**Acute aquatic toxicity**

**Acute toxicity - fish** LC<sub>50</sub>, 96 hours: >100 mg/l, Brachydanio rerio (Zebra Fish)

**Acute toxicity - aquatic invertebrates** EC<sub>50</sub>, 48 hours: 98 mg/l, Daphnia magna

### 12.2. Persistence and degradability

**Persistence and degradability** The degradability of the product is not known.

### Ecological information on ingredients.

#### Propan-2-ol

**Persistence and degradability** The product is readily biodegradable.

**Biodegradation** Water - Degradation (53%): 5 days  
REACH dossier information.  
The substance is readily biodegradable.

**Biological oxygen demand** 1.19 - 1.72 g O<sub>2</sub>/g substance REACH dossier information.

**Chemical oxygen demand** 2.23 g O<sub>2</sub>/g substance REACH dossier information.

#### Aluminum chloride, basic

**Persistence and degradability** The product contains only inorganic substances which are not biodegradable.

### 12.3. Bioaccumulative potential

**Bioaccumulative potential** No data available on bioaccumulation.

**Partition coefficient** Not available.

### Ecological information on ingredients.

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### Propan-2-ol

**Bioaccumulative potential** No data available on bioaccumulation.

### Aluminum chloride, basic

**Bioaccumulative potential** No data available on bioaccumulation.

#### 12.4. Mobility in soil

**Mobility** Semi-mobile.

#### Ecological information on ingredients.

### Propan-2-ol

**Mobility** Soluble in water.

### Aluminum chloride, basic

**Mobility** The product is miscible with water and may spread in water systems.

**Surface tension** 73.6 mN/m @ 20°C

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

**Results of PBT and vPvB assessment** This product does not contain any substances classified as PBT or vPvB.

#### Ecological information on ingredients.

### Propan-2-ol

**Results of PBT and vPvB assessment** This substance is not classified as PBT or vPvB according to current EU criteria.

### Aluminum chloride, basic

**Results of PBT and vPvB assessment** Substance is inorganic. Not relevant.

#### 12.6. Other adverse effects

**Other adverse effects** None known.

### **SECTION 13: Disposal considerations**

#### 13.1. Waste treatment methods

**Disposal methods** The packaging must be empty (drop-free when inverted). Empty containers must not be punctured or incinerated because of the risk of an explosion. Dispose of contents/container in accordance with national regulations.

### **SECTION 14: Transport information**

#### 14.1. UN number

UN No. (ADR/RID)	1993
UN No. (IMDG)	1993
UN No. (ICAO)	1993
UN No. (ADN)	1993

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### 14.2. UN proper shipping name

Proper shipping name (ADR/RID)	FLAMMABLE LIQUID, N.O.S. (CONTAINS Propan-2-ol)
Proper shipping name (IMDG)	FLAMMABLE LIQUID, N.O.S. (CONTAINS Propan-2-ol)
Proper shipping name (ICAO)	FLAMMABLE LIQUID, N.O.S. (CONTAINS Propan-2-ol)
Proper shipping name (ADN)	FLAMMABLE LIQUID, N.O.S. (CONTAINS Propan-2-ol)

### 14.3. Transport hazard class(es)

ADR/RID class	3
ADR/RID classification code	F1
ADR/RID label	3
IMDG class	3
ICAO class/division	3
ADN class	3

#### Transport labels



### 14.4. Packing group

ADR/RID packing group	II
IMDG packing group	II
ICAO packing group	II
ADN packing group	II

### 14.5. Environmental hazards

Environmentally hazardous substance/marine pollutant  
No.

### 14.6. Special precautions for user

EmS	F-E, S-E
ADR transport category	2
Emergency Action Code	•3YE
Hazard Identification Number (ADR/RID)	33
Tunnel restriction code	(D/E)

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

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

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**EU legislation** Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (as amended).  
Commission Regulation (EU) No 2015/830 of 28 May 2015.  
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 (as amended).

### 15.2. Chemical safety assessment

No chemical safety assessment has been carried out.

### SECTION 16: Other information

**Classification abbreviations and acronyms** Acute Tox. = Acute toxicity  
Aquatic Acute = Hazardous to the aquatic environment (acute)  
Aquatic Chronic = Hazardous to the aquatic environment (chronic)  
Eye Dam. = Serious eye damage  
Eye Irrit. = Eye irritation  
Flam. Liq. = Flammable liquid  
Met. Corr. = Corrosive to metals  
Skin Corr. = Skin corrosion  
Skin Irrit. = Skin irritation  
STOT SE = Specific target organ toxicity-single exposure

**Training advice** Only trained personnel should use this material.

**Revision comments** Revised regulations.

**Revision date** 27/11/2018

**Revision** 28

**Supersedes date** 12/08/2016

**SDS number** 607

**Hazard statements in full** H225 Highly flammable liquid and vapour.  
H290 May be corrosive to metals.  
H302 Harmful if swallowed.  
H314 Causes severe skin burns and eye damage.  
H318 Causes serious eye damage.  
H319 Causes serious eye irritation.  
H336 May cause drowsiness or dizziness.  
H400 Very toxic to aquatic life.  
H410 Very toxic to aquatic life with long lasting effects.  
H412 Harmful to aquatic life with long lasting effects.

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty, guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.