

**SAFETY DATA SHEET**  
**Virodox**

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

**1.1. Product identifier**

Product name Virodox

Product number AF8950

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

Identified uses Surface and equipment disinfectant concentrate

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

Supplier Kilco (International) Ltd  
Broomhouses 2 Industrial Estate  
Old Glasgow Road  
Lockerbie  
DG11 2SD  
United Kingdom  
+44 (0) 157 620 5480  
sds@kilco.co.uk

**1.4. Emergency telephone number**

Emergency telephone +44 (0) 207 858 1228

National emergency telephone number National Poisons Information Service

For medical advice or information you should contact your GP or NHS 111 (or NHS 24 in Scotland) on 111 (for 24 hour health advice)

If you are a healthcare professional with an enquiry please visit [www.TOXBASE.org](http://www.TOXBASE.org)

**SECTION 2: Hazards identification**

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

**Classification (EC 1272/2008)**

Physical hazards Ox. Liq. 2 - H272 Met. Corr. 1 - H290

Health hazards Acute Tox. 4 - H302 Acute Tox. 4 - H312 Acute Tox. 4 - H332 Skin Corr. 1A - H314 Eye Dam. 1 - H318 STOT SE 3 - H335

Environmental hazards Aquatic Chronic 1 - H410

**2.2. Label elements**

# Virodox

## Pictogram



## Signal word

Danger

## Hazard statements

H272 May intensify fire; oxidiser.  
H290 May be corrosive to metals.  
H302+H312+H332 Harmful if swallowed, in contact with skin or if inhaled.  
H314 Causes severe skin burns and eye damage.  
H335 May cause respiratory irritation.  
H410 Very toxic to aquatic life with long lasting effects.

## Precautionary statements

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
P260 Do not breathe vapour/ spray.  
P273 Avoid release to the environment.  
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.  
P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.  
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P391 Collect spillage.

## Contains

hydrogen peroxide solution, acetic acid, peracetic acid

## Supplementary precautionary statements

P220 Keep away from combustible materials.  
P221 Take any precaution to avoid mixing with combustibles.  
P234 Keep only in original packaging.  
P261 Avoid breathing vapour/ spray.  
P264 Wash contaminated skin thoroughly after handling.  
P270 Do not eat, drink or smoke when using this product.  
P271 Use only outdoors or in a well-ventilated area.  
P301+P312 IF SWALLOWED: Call a POISON CENTRE/doctor if you feel unwell.  
P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.  
P302+P352 IF ON SKIN: Wash with plenty of water.  
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
P310 Immediately call a POISON CENTER/ doctor.  
P321 Specific treatment (see medical advice on this label).  
P362+P364 Take off contaminated clothing and wash it before reuse.  
P363 Wash contaminated clothing before reuse.  
P370+P378 In case of fire: Use foam, carbon dioxide, dry powder or water fog to extinguish.  
P390 Absorb spillage to prevent material damage.  
P403+P233 Store in a well-ventilated place. Keep container tightly closed.  
P405 Store locked up.  
P406 Store in a corrosion-resistant container with a resistant inner liner.  
P501 Dispose of contents/ container in accordance with national regulations.

## 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

# Virodox

<b>hydrogen peroxide solution</b>			<b>20-30%</b>
CAS number: 7722-84-1	EC number: 231-765-0	REACH registration number: 01-2119485845-22-XXXX	
<b>Classification</b> Ox. Liq. 1 - H271 Acute Tox. 4 - H302 Acute Tox. 4 - H332 Skin Corr. 1A - H314 Eye Dam. 1 - H318 STOT SE 3 - H335 Aquatic Chronic 3 - H412			
<b>acetic acid</b>			<b>10-20%</b>
CAS number: 64-19-7	EC number: 200-580-7	REACH registration number: 01-2119475328-30-XXXX	
<b>Classification</b> Flam. Liq. 3 - H226 Skin Corr. 1A - H314 Eye Dam. 1 - H318			
<b>peracetic acid</b>			<b>1-5%</b>
CAS number: 79-21-0	EC number: 201-186-8		
M factor (Acute) = 1	M factor (Chronic) = 10		
<b>Classification</b> Flam. Liq. 3 - H226 Org. Perox. D - H242 Acute Tox. 3 - H301 Acute Tox. 2 - H310 Acute Tox. 2 - H330 Skin Corr. 1A - H314 Eye Dam. 1 - H318 STOT SE 3 - H335 Aquatic Acute 1 - H400 Aquatic Chronic 1 - H410			

The Full Text for all R-Phrases and Hazard Statements are Displayed in Section 16.

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

#### General information

Get medical attention if any discomfort continues. Show this Safety Data Sheet to the medical personnel. Chemical burns must be treated by a physician.

#### Inhalation

Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. Maintain an open airway. Loosen tight clothing such as collar, tie or belt. When breathing is difficult, properly trained personnel may assist affected person by administering oxygen. Get medical attention. Place unconscious person on their side in the recovery position and ensure breathing can take place.

# Virodox

<b>Ingestion</b>	Rinse mouth thoroughly with water. Give a few small glasses of water or milk to drink. Stop if the affected person feels sick as vomiting may be dangerous. Never give anything by mouth to an unconscious person. Place unconscious person on their side in the recovery position and ensure breathing can take place. Keep affected person under observation. Get medical attention if symptoms are severe or persist.
<b>Skin contact</b>	It is important to remove the substance from the skin immediately. Rinse immediately with plenty of water. Continue to rinse for at least 15 minutes and get medical attention. Chemical burns must be treated by a physician.
<b>Eye contact</b>	Rinse immediately with plenty of water. Do not rub eye. Remove any contact lenses and open eyelids wide apart. Continue to rinse for at least 15 minutes and get medical attention.
<b>Protection of first aiders</b>	It may be dangerous for first aid personnel to carry out mouth-to-mouth resuscitation. First aid personnel should wear appropriate protective equipment during any rescue. Wash contaminated clothing thoroughly with water before removing it from the affected person, or wear gloves.

## 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>	A single exposure may cause the following adverse effects: Severe irritation of nose and throat. Symptoms following overexposure may include the following: Corrosive to the respiratory tract.
<b>Ingestion</b>	May cause chemical burns in mouth, oesophagus and stomach. Symptoms following overexposure may include the following: Severe stomach pain. Nausea, vomiting.
<b>Skin contact</b>	Causes severe burns. Symptoms following overexposure may include the following: Pain or irritation. Redness. Blistering may occur.
<b>Eye contact</b>	Causes serious eye damage. Symptoms following overexposure may include the following: Pain. Profuse watering of the eyes. Redness.

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

<b>Notes for the doctor</b>	Treat symptomatically.
-----------------------------	------------------------

## **SECTION 5: Firefighting measures**

### 5.1. Extinguishing media

<b>Suitable extinguishing media</b>	Extinguish with alcohol-resistant foam, carbon dioxide, dry powder or water fog. Use fire-extinguishing media suitable for the surrounding fire.
<b>Unsuitable extinguishing media</b>	Do not use water jet as an extinguisher, as this will spread the fire. Dry chemicals.

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

<b>Specific hazards</b>	May cause or intensify fire; oxidiser. Severe corrosive hazard. Water used for fire extinguishing, which has been in contact with the product, may be corrosive.
<b>Hazardous combustion products</b>	Thermal decomposition or combustion products may include the following substances: Very toxic or corrosive gases or vapours. Oxygen. Oxides of sulphur. Oxides of carbon.

### 5.3. Advice for firefighters

# Virodox

<b>Protective actions during firefighting</b>	Avoid breathing fire gases or vapours. Evacuate area. Keep upwind to avoid inhalation of gases, vapours, fumes and smoke. Ventilate closed spaces before entering them. May cause or intensify fire; oxidiser. 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. If a leak or spill has not ignited, use water spray to disperse vapours and protect men stopping the leak. Avoid discharge to the aquatic environment. Control run-off water by containing and keeping it out of sewers and watercourses. If risk of water pollution occurs, notify appropriate authorities.
<b>Special protective equipment for firefighters</b>	Regular protection may not be safe. Wear chemical protective suit. Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing. Firefighter's clothing conforming to European standard EN469 (including helmets, protective boots and gloves) will provide a basic level of protection for chemical incidents.

## SECTION 6: Accidental release measures

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

<b>Personal precautions</b>	No action shall be taken without appropriate training or involving any personal risk. Keep unnecessary and unprotected personnel away from the spillage. Wear protective clothing as described in Section 8 of this safety data sheet. Follow precautions for safe handling described in this safety data sheet. Wash thoroughly after dealing with a spillage. Ensure procedures and training for emergency decontamination and disposal are in place. Do not touch or walk into spilled material. Avoid inhalation of vapours and spray/mists. Use suitable respiratory protection if ventilation is inadequate. Avoid contact with skin and eyes. Avoid contact with contaminated tools and objects.
-----------------------------	---

### 6.2. Environmental precautions

<b>Environmental precautions</b>	Avoid discharge into drains or watercourses or onto the ground. Avoid discharge to the aquatic environment.
----------------------------------	---

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

<b>Methods for cleaning up</b>	Wear protective clothing as described in Section 8 of this safety data sheet. Clear up spills immediately and dispose of waste safely. Eliminate all ignition sources if safe to do so. No smoking, sparks, flames or other sources of ignition near spillage. Use only non-sparking tools. Use explosion-proof electrical equipment. This product is corrosive. Provide adequate ventilation. Absorb spillage with non-combustible, absorbent material. The contaminated absorbent may pose the same hazard as the spilled material. Collect and place in suitable waste disposal containers and seal securely. Label the containers containing waste and contaminated materials and remove from the area as soon as possible. Flush contaminated area with plenty of water. For waste disposal, see Section 13.
--------------------------------	---

### 6.4. Reference to other sections

<b>Reference to other sections</b>	For personal protection, see Section 8. See Section 11 for additional information on health hazards. See Section 12 for additional information on ecological hazards. For waste disposal, see Section 13.
------------------------------------	---

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

<b>Usage precautions</b>	Wear protective clothing as described in Section 8 of this safety data sheet. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Handle all packages and containers carefully to minimise spills.
--------------------------	---

# Virodox

## Advice on general occupational hygiene

Wash promptly if skin becomes contaminated. Take off contaminated clothing. Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Wash at the end of each work shift and before eating, smoking and using the toilet. Change work clothing daily before leaving workplace.

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

### Storage precautions

Keep away from flammable and combustible materials. Store away from incompatible materials (see Section 10). Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Keep only in the original container. Keep container tightly closed, in a cool, well ventilated place. Keep containers upright. Protect containers from damage.

## 7.3. Specific end use(s)

### 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

##### hydrogen peroxide solution

Long-term exposure limit (8-hour TWA): WEL 1 ppm 1.4 mg/m<sup>3</sup>

Short-term exposure limit (15-minute): WEL 2 ppm 2.8 mg/m<sup>3</sup>

WEL = Workplace Exposure Limit

#### hydrogen peroxide solution (CAS: 7722-84-1)

##### DNEL

Workers - Inhalation; Short term local effects: 3 mg/m<sup>3</sup>  
Workers - Inhalation; Long term local effects: 1.4 mg/m<sup>3</sup>  
Consumer - Inhalation; Short term local effects: 1.93 mg/m<sup>3</sup>  
Consumer - Inhalation; Long term local effects: 0.21 mg/m<sup>3</sup>

##### PNEC

- Fresh water; 0.0126 mg/l  
- Marine water; 0.0126 mg/l  
- Soil; 0.0023 mg/kg  
- STP; 4.66 mg/l  
- Sediment (Freshwater); 0.047 mg/kg  
- Sediment (Marinewater); 0.047 mg/kg  
- Intermittent release; 0.0138 mg/l

#### acetic acid (CAS: 64-19-7)

##### DNEL

Workers - Inhalation; Short term local effects: 25 mg/m<sup>3</sup>  
General population - Inhalation; Short term local effects: 25 mg/m<sup>3</sup>  
Workers - Inhalation; Long term local effects: 25 mg/m<sup>3</sup>  
General population - Inhalation; Long term local effects: 25 mg/m<sup>3</sup>

##### PNEC

- Fresh water; 3.058 mg/l  
- Marine water; 0.3058 mg/l  
- Intermittent release; 30.58 mg/l  
- STP; 85 mg/l  
- Sediment (Freshwater); 11.36 mg/kg  
- Sediment (Marinewater); 1.136 mg/kg  
- Soil; 0.47 mg/kg

#### peracetic acid (CAS: 79-21-0)

## Virodox

<b>DNEL</b>	<p>General population - Inhalation; Long term systemic effects: 0.28 mg/m<sup>3</sup></p> <p>General population - Inhalation; Short term systemic effects: 0.28 mg/m<sup>3</sup></p> <p>General population - Oral; Long term systemic effects: 1.25 mg/kg</p> <p>General population - Oral; Short term systemic effects: 1.25 mg/kg</p> <p>Workers - Inhalation; Long term systemic effects: 0.56 mg/m<sup>3</sup></p> <p>Workers - Inhalation; Short term systemic effects: 0.56 mg/m<sup>3</sup></p>
<b>PNEC</b>	<p>- Fresh water; 0.000094 mg/l</p> <p>- Marine water; 0.000049 mg/l</p> <p>- Intermittent release; 0.0016 mg/l</p> <p>- STP; 0.051 mg/l</p> <p>- Sediment (Freshwater); 0.000077 mg/kg</p> <p>- Sediment (Marinewater); 0.000015 mg/kg</p> <p>- Soil; 0.32 mg/kg</p>

### 8.2. Exposure controls

#### Protective equipment



#### Appropriate engineering controls

Provide adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls as the primary means to minimise worker exposure. Personal protective equipment should only be used if worker exposure cannot be controlled adequately by the engineering control measures. Ensure control measures are regularly inspected and maintained. Ensure operatives are trained to minimise exposure.

#### Eye/face protection

Wear tight-fitting, chemical splash goggles or face shield. Personal protective equipment for eye and face protection should comply with European Standard EN166. If inhalation hazards exist, a full-face respirator may be required instead.

#### Hand protection

To protect hands from chemicals, gloves should comply with European Standard EN374. 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. Considering the data specified by the glove manufacturer, check during use that the gloves are retaining their protective properties and change them as soon as any deterioration is detected. Frequent changes are recommended.

#### Other skin and body protection

Wear protective clothing.

#### Hygiene measures

Provide eyewash station and safety shower. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse. Clean equipment and the work area every day. Good personal hygiene procedures should be implemented. Wash at the end of each work shift and before eating, smoking and using the toilet. When using do not eat, drink or smoke.

#### Respiratory protection

Respiratory protection complying with an approved standard should be worn if a risk assessment indicates inhalation of contaminants is possible. Ensure all respiratory protective equipment is suitable for its intended use and is 'CE'-marked. Check that the respirator fits tightly and the filter is changed regularly. Gas and combination filter cartridges should comply with European Standard EN14387. Full face mask respirators with replaceable filter cartridges should comply with European Standard EN136. Half mask and quarter mask respirators with replaceable filter cartridges should comply with European Standard EN140.

#### Environmental exposure controls

Keep container tightly sealed when not in use. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

# Virodox

## SECTION 9: Physical and Chemical Properties

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

Appearance	Liquid.
Colour	Colourless.
Odour	Acetic acid.
pH	pH (concentrated solution): <1.5
Melting point	< -15°C
Relative density	~ 1.1 @ 20°C
Solubility(ies)	Soluble in water.
Decomposition Temperature	>55°C
Explosive properties	Not considered to be explosive.
Oxidising properties	Ox. Liq. 2 (mean pressure rise time $\leq$ that of a 1:1 mixture, by mass, of 40 % aqueous sodium chlorate solution and cellulose).

### 9.2. Other information

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

**Reactivity** See Section 10.3 (Possibility of hazardous reactions) for further information.

### 10.2. Chemical stability

**Stability** Stable at normal ambient temperatures and when used as recommended. Stable under the prescribed storage conditions. Will decompose at temperatures exceeding 55°C.

### 10.3. Possibility of hazardous reactions

**Possibility of hazardous reactions** No potentially hazardous reactions known.

### 10.4. Conditions to avoid

**Conditions to avoid** Avoid heat, flames and other sources of ignition. Avoid exposure to high temperatures or direct sunlight. Will decompose at temperatures exceeding 55°C.

### 10.5. Incompatible materials

**Materials to avoid** Acids. Alkalis. Reducing agents. Flammable/combustible materials. Organic compounds. Some metals.

### 10.6. Hazardous decomposition products

**Hazardous decomposition products** Does not decompose when used and stored as recommended. Thermal decomposition or combustion products may include the following substances: Very toxic or corrosive gases or vapours. Oxygen. Oxides of carbon. Oxides of sulphur.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

#### Acute toxicity - oral

**Acute toxicity oral (LD<sub>50</sub> mg/kg)** 1,020.0

**Species** Rat



## Virodox

<b>Notes (oral LD<sub>50</sub>)</b>	Acute Tox. 4 - H302 Harmful if swallowed.
<b>ATE oral (mg/kg)</b>	1,020.0
<b><u>Acute toxicity - dermal</u></b>	
<b>Acute toxicity dermal (LD<sub>50</sub> mg/kg)</b>	1,147.0
<b>Species</b>	Rabbit
<b>Notes (dermal LD<sub>50</sub>)</b>	Acute Tox. 4 - H312 Harmful in contact with skin.
<b>ATE dermal (mg/kg)</b>	1,147.0
<b><u>Acute toxicity - inhalation</u></b>	
<b>Acute toxicity inhalation (LC<sub>50</sub> dust/mist mg/l)</b>	4.08
<b>Species</b>	Rat
<b>Notes (inhalation LC<sub>50</sub>)</b>	Acute Tox. 4 - H332 Harmful if inhaled.
<b>ATE inhalation (dusts/mists mg/l)</b>	4.08
<b><u>Skin corrosion/irritation</u></b>	
<b>Animal data</b>	Skin Corr. 1A - H314 Causes severe burns.
<b><u>Serious eye damage/irritation</u></b>	
<b>Serious eye damage/irritation</b>	Eye Dam. 1 - H318 Corrosive to skin. Corrosivity to eyes is assumed.
<b><u>Specific target organ toxicity - single exposure</u></b>	
<b>STOT - single exposure</b>	STOT SE 3 - H335 May cause respiratory irritation.
<b>Target organs</b>	Respiratory system, lungs

### Toxicological information on ingredients.

#### hydrogen peroxide solution

##### Acute toxicity - oral

**Acute toxicity oral (LD<sub>50</sub> mg/kg)** 602.0

**Species** Rat

**ATE oral (mg/kg)** 602.0

##### Acute toxicity - dermal

**Notes (dermal LD<sub>50</sub>)** LD<sub>50</sub> >2000 mg/kg, Dermal, Rabbit

##### Acute toxicity - inhalation

**ATE inhalation (vapours mg/l)** 11.0

##### Skin corrosion/irritation

**Skin corrosion/irritation** Corrosive to skin. Causes severe burns.

##### Serious eye damage/irritation

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

## Virodox

### Respiratory sensitisation

Respiratory sensitisation No data available.

### Skin sensitisation

Skin sensitisation Conclusive data but not sufficient for classification.

### Germ cell mutagenicity

Genotoxicity - in vitro Conclusive data but not sufficient for classification.

Genotoxicity - in vivo Conclusive data but not sufficient for classification.

### Carcinogenicity

Carcinogenicity Conclusive data but not sufficient for classification.

### Reproductive toxicity

Reproductive toxicity - fertility Conclusive data but not sufficient for classification.

Reproductive toxicity - development Conclusive data but not sufficient for classification.

### Specific target organ toxicity - single exposure

STOT - single exposure STOT SE 3 - H335 Respiratory system irritation.

Target organs Respiratory tract

### Specific target organ toxicity - repeated exposure

STOT - repeated exposure Conclusive data but not sufficient for classification. LOAEL 0.0029 mg/l, Inhalation, Rat NOAEL 26 mg/kg/day, Oral, Rat

### Aspiration hazard

Aspiration hazard No data available.

### acetic acid

#### Acute toxicity - oral

Acute toxicity oral (LD<sub>50</sub> mg/kg) 3,320.0

Species Rat

ATE oral (mg/kg) 3,320.0

#### Acute toxicity - dermal

Notes (dermal LD<sub>50</sub>) No data available.

#### Acute toxicity - inhalation

Acute toxicity inhalation (LC<sub>50</sub> vapours mg/l) 40.0

Species Rat

ATE inhalation (vapours mg/l) 40.0

#### Skin corrosion/irritation

Skin corrosion/irritation Skin Corr. 1A - H314 Causes severe burns.

# Virodox

## Serious eye damage/irritation

**Serious eye damage/irritation** Eye Dam. 1 - H318 Corrosive to skin and eyes.

## Respiratory sensitisation

**Respiratory sensitisation** Not sensitising.

## Skin sensitisation

**Skin sensitisation** Not sensitising.

## 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** No data available.

## Specific target organ toxicity - repeated exposure

**STOT - repeated exposure** No data available.

## Aspiration hazard

**Aspiration hazard** No data available.

**Inhalation** Severe irritation of nose and throat.

**Ingestion** May cause chemical burns in mouth, oesophagus and stomach. Severe stomach pain. Nausea, vomiting.

**Skin contact** Causes severe burns. Pain or irritation. Redness. Blistering may occur.

**Eye contact** Causes serious eye damage. Pain. Profuse watering of the eyes. Redness.

**Route of exposure** Ingestion Inhalation Skin and/or eye contact

**Target organs** No specific target organs known.

## peracetic acid

### Acute toxicity - oral

**Acute toxicity oral (LD<sub>50</sub> mg/kg)** 85.0

**Species** Rat

**Notes (oral LD<sub>50</sub>)** Acute Tox. 3 - H301 Toxic if swallowed.

**ATE oral (mg/kg)** 85.0

### Acute toxicity - dermal

## Virodox

**Acute toxicity dermal (LD<sub>50</sub> mg/kg)** 56.1

**Species** Rabbit

**Notes (dermal LD<sub>50</sub>)** Acute Tox. 2 - H310 Fatal in contact with skin.

**ATE dermal (mg/kg)** 56.1

### Acute toxicity - inhalation

**Acute toxicity inhalation (LC<sub>50</sub> dust/mist mg/l)** 0.204

**Species** Rat

**Notes (inhalation LC<sub>50</sub>)** Acute Tox. 2 - H330 Fatal if inhaled.

**ATE inhalation (dusts/mists mg/l)** 0.204

### Skin corrosion/irritation

**Skin corrosion/irritation** Corrosive to skin.

### Serious eye damage/irritation

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

### Skin sensitisation

**Skin sensitisation** Not sensitising.

### Germ cell mutagenicity

**Genotoxicity - in vitro** Ames test: Negative.

### Carcinogenicity

**Carcinogenicity** No evidence of carcinogenicity in animal studies.

### Reproductive toxicity

**Reproductive toxicity - development** Developmental toxicity: - NOAEL: 12.5 mg/kg bw/d, Oral, Rat

### Specific target organ toxicity - single exposure

**STOT - single exposure** STOT SE 3 - H335 May cause respiratory irritation.

**Target organs** Respiratory system, lungs

### Specific target organ toxicity - repeated exposure

**STOT - repeated exposure** Conclusive data but not sufficient for classification.

### Aspiration hazard

**Aspiration hazard** Conclusive data but not sufficient for classification.

## SECTION 12: Ecological Information

**Ecotoxicity** Very toxic to aquatic life with long lasting effects. The product may affect the acidity (pH) of water which may have hazardous effects on aquatic organisms.

### 12.1. Toxicity

**Toxicity** Aquatic Chronic 1 - H410 Very toxic to aquatic life with long lasting effects.

# Virodox

## Ecological information on ingredients.

### hydrogen peroxide solution

<b>Toxicity</b>	Aquatic Chronic 3 - H412
<b><u>Acute aquatic toxicity</u></b>	
<b>Acute toxicity - fish</b>	LC <sub>50</sub> , 96 hour: 16.4 mg/l, Pimephales promelas (Fat-head Minnow)
<b>Acute toxicity - aquatic invertebrates</b>	LC <sub>50</sub> , 48 hour: 2.4 mg/l, Daphnia magna
<b>Acute toxicity - aquatic plants</b>	ErC50, 72 hour: 1.38 mg/l, skeletonema costatum
<b>Acute toxicity - microorganisms</b>	EC <sub>50</sub> , 0.5 hour: 466 mg/l, Activated sludge
<b><u>Chronic aquatic toxicity</u></b>	
<b>Chronic toxicity - aquatic invertebrates</b>	NOEC, 21 day: 0.63 mg/l, Daphnia magna

### peracetic acid

<b>Toxicity</b>	Aquatic Acute 1 - H400 Very toxic to aquatic life. Aquatic Chronic 1 - H410 Very toxic to aquatic life with long lasting effects.
<b><u>Acute aquatic toxicity</u></b>	
<b>LE(C)<sub>50</sub></b>	0.1 < L(E)C50 ≤ 1
<b>M factor (Acute)</b>	1
<b>Acute toxicity - fish</b>	LC <sub>50</sub> , 96 hour: 1.1 mg/l, Lepomis macrochirus (Bluegill)
<b>Acute toxicity - aquatic invertebrates</b>	EC <sub>50</sub> , 48 hour: 0.73 mg/l, Daphnia magna
<b>Acute toxicity - aquatic plants</b>	EC <sub>50</sub> , 72 hour: 0.16 mg/l, Selenastrum capricornutum NOEC, 72 hour: 0.061 mg/l, Selenastrum capricornutum
<b>Acute toxicity - microorganisms</b>	EC <sub>50</sub> , 3 hour: 5.1 mg/l, Activated sludge
<b><u>Chronic aquatic toxicity</u></b>	
<b>NOEC</b>	0.0001 < NOEC ≤ 0.001
<b>Degradability</b>	Rapidly degradable
<b>M factor (Chronic)</b>	10
<b>Chronic toxicity - fish early life stage</b>	NOEC, 33 days: 0.00069 mg/l, Brachydanio rerio (Zebra Fish)
<b>Chronic toxicity - aquatic invertebrates</b>	NOEC, 21 days: 0.0121 mg/l, Daphnia magna

## 12.2. Persistence and degradability

## Ecological information on ingredients.

### hydrogen peroxide solution

## Virodox

**Persistence and degradability** Substance is inorganic.

### peracetic acid

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

### 12.3. Bioaccumulative potential

#### Ecological information on ingredients.

### hydrogen peroxide solution

**Partition coefficient** Kow: -1.57 Calculation method.

### peracetic acid

**Bioaccumulative potential** The product is not bioaccumulating.

**Partition coefficient** log Pow: -0.46

### 12.4. Mobility in soil

#### Ecological information on ingredients.

### hydrogen peroxide solution

**Henry's law constant** 0.001 Pa m<sup>3</sup>/mol @ 20°C

**Surface tension** 80.4 mN/m @ 20°C

### peracetic acid

**Mobility** The product is soluble in water. The product is non-volatile.

**Henry's law constant** 0.217 Pa m<sup>3</sup>/mol @ 25°C

### 12.5. Results of PBT and vPvB assessment

#### Ecological information on ingredients.

### hydrogen peroxide solution

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

### peracetic acid

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

### 12.6. Other adverse effects

#### Ecological information on ingredients.

### peracetic acid

**Other adverse effects** None known.

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

# Virodox

**General information** The generation of waste should be minimised or avoided wherever possible. This material and its container must be disposed of in a safe way. Disposal of this product, process solutions, residues and by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any local authority requirements. When handling waste, the safety precautions applying to handling of the product should be considered. Care should be taken when handling emptied containers that have not been thoroughly cleaned or rinsed out. Empty containers or liners may retain some product residues and hence be potentially hazardous.

**Disposal methods** Dispose of waste product or used containers in accordance with local regulations Do not empty into drains.

## SECTION 14: Transport information

**General** For limited quantity packaging/limited load information, consult the relevant modal documentation using the data shown in this section.

### 14.1. UN number

UN No. (ADR/RID) 3149

UN No. (IMDG) 3149

UN No. (ICAO) 3149

UN No. (ADN) 3149

### 14.2. UN proper shipping name

**Proper shipping name (ADR/RID)** HYDROGEN PEROXIDE AND PEROXYACETIC ACID MIXTURE, STABILIZED

**Proper shipping name (IMDG)** HYDROGEN PEROXIDE AND PEROXYACETIC ACID MIXTURE, STABILIZED

**Proper shipping name (ICAO)** HYDROGEN PEROXIDE AND PEROXYACETIC ACID MIXTURE, STABILIZED

**Proper shipping name (ADN)** HYDROGEN PEROXIDE AND PEROXYACETIC ACID MIXTURE, STABILIZED

### 14.3. Transport hazard class(es)

ADR/RID class 5.1

ADR/RID subsidiary risk 8

ADR/RID classification code OC1

ADR/RID label 5.1

IMDG class 5.1

IMDG subsidiary risk 8

ICAO class/division 5.1

ICAO subsidiary risk 8

ADN class 5.1

ADN subsidiary risk 8

### Transport labels



### 14.4. Packing group

# Virodax

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

## 14.5. Environmental hazards

Environmentally hazardous substance/marine pollutant



## 14.6. Special precautions for user

Always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

EmS	F-H, S-Q
ADR transport category	2
Emergency Action Code	2P
Hazard Identification Number (ADR/RID)	58
Tunnel restriction code	(E)

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

### SECTION 15: Regulatory information

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

<b>National regulations</b>	Health and Safety at Work etc. Act 1974 (as amended). The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2009 (SI 2009 No. 1348) (as amended) ["CDG 2009"]. EH40/2005 Workplace exposure limits.
<b>EU legislation</b>	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). Directive 2012/18/EU of the European Parliament and of the Council of 4 July 2012 on the control of major-accident hazards involving dangerous substances.

#### 15.2. Chemical safety assessment

No chemical safety assessment has been carried out.

### SECTION 16: Other information



# Virodox

## Abbreviations and acronyms used in the safety data sheet

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road.  
ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways.  
RID: European Agreement concerning the International Carriage of Dangerous Goods by Rail.  
IATA: International Air Transport Association.  
ICAO-TI: Technical Instructions for the Safe Transport of Dangerous Goods by Air.  
IMDG: International Maritime Dangerous Goods.  
CAS: Chemical Abstracts Service.  
ATE: Acute Toxicity Estimate.  
LC<sub>50</sub>: Lethal Concentration to 50 % of a test population.  
LD<sub>50</sub>: Lethal Dose to 50% of a test population (Median Lethal Dose).  
EC<sub>50</sub>: 50% of maximal Effective Concentration.  
PBT: Persistent, Bioaccumulative and Toxic substance.  
vPvB: Very Persistent and Very Bioaccumulative.  
DNEL: Derived No Effect Level.  
PNEC: Predicted No Effect Concentration.  
REACH: Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006.  
SVHC: Substances of Very High Concern.  
NOEC: No Observed Effect Concentration.  
UN: United Nations.  
IBC: International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk (International Bulk Chemical Code).

## Classification abbreviations and acronyms

Met. Corr. = Corrosive to metals  
Ox. Liq. = Oxidising liquid  
Acute Tox. = Acute toxicity  
Eye Dam. = Serious eye damage  
Skin Corr. = Skin corrosion  
STOT SE = Specific target organ toxicity-single exposure  
Aquatic Chronic = Hazardous to the aquatic environment (chronic)

## Key literature references and sources for data

Source: European Chemicals Agency, <http://echa.europa.eu/>

## Classification procedures according to Regulation (EC) 1272/2008

Acute Tox. 4 - H312: Acute Tox. 4 - H332: Acute Tox. 4 - H302: Eye Dam. 1 - H318: Skin Corr. 1A - H314: STOT SE 3 - H335: : Calculation method. Aquatic Chronic 1 - H410: : Calculation method. Met. Corr. 1 - H290: Ox. Liq. 2 - H272: : Expert judgement.

## Training advice

Read and follow manufacturer's recommendations. Only trained personnel should use this material.

## Virodox

### Hazard statements in full

H226 Flammable liquid and vapour.  
H242 Heating may cause a fire.  
H271 May cause fire or explosion; strong oxidiser.  
H272 May intensify fire; oxidiser.  
H290 May be corrosive to metals.  
H301 Toxic if swallowed.  
H302 Harmful if swallowed.  
H310 Fatal in contact with skin.  
H312 Harmful in contact with skin.  
H314 Causes severe skin burns and eye damage.  
H318 Causes serious eye damage.  
H330 Fatal if inhaled.  
H332 Harmful if inhaled.  
H335 May cause respiratory irritation.  
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.