



# VitroVivo Biotech

Make Tissues, Cells, Genes and Molecules Visible

MATERIAL SAFETY DATA SHEET (MSDS)

**Kit Name:** VitroView™ Congo Red Amyloid Stain Kit  
**SKU #:** VB 3011

**Revision Date:** 01-16-2017

**Components:**

|                   |                              |
|-------------------|------------------------------|
| <b>VB-3011 -1</b> | Congo Red Solution           |
| <b>VB-3011 -2</b> | Alkaline Alcohol Solution    |
| <b>VB-3011 -3</b> | Mayer's Hematoxylin Solution |

## VB 3011-1 Congo Red Solution MSDS

### 1. Identification of the Substance/Mixture and Company

#### Identification of the substance or mixture

**Product Name** Congo Red Solution  
**Product number** VB-3011-1  
**Product Description** Kit Component

#### Manufacturer/Supplier

VitroVivo Biotech, LLC. 9605 Medical Center Dr. Suite 315, Rockville, MD 20850  
Phone: 301-500-0499 Toll free: 1-800-260-9817 Fax: 844-248-6208

### 2. Composition and Information on Ingredients

#### **Composition:**

| Name          | CAS #     |
|---------------|-----------|
| Congo Red     | 573-58-0  |
| Ethyl Alcohol | 64-17-5   |
| Water         | 7732-18-5 |

**Notice:** Noncombustible solution. When heated to decomposition, emits acrid fumes.

### 3. Hazards Identification

#### **Classification (GHS-US)**

Carc. 1B H350  
Repr. 2 H361  
Full text of H-phrases: see section 16

#### **Potential Acute Health Effects:**

Slightly hazardous in case of skin contact (irritant, sensitizer), of eye contact (irritant), of ingestion, . Non-corrosive for skin. Non-corrosive to the eyes. Non-corrosive for lungs.

#### **Potential Chronic Health Effects:**

Carcinogenic effects: N/A Mutagenic effects: Mutagenic for mammalian somatic cells. [Congo red].  
Mutagenic for bacteria and/or yeast. [Congo red]. Teratogenic effects: Classified Possible for human  
[Congo red]. Developmental toxicity: N/A

### 4. First Aid Measures

#### **Eye Contact:**

Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention if irritation occurs.

#### **Skin Contact:**

Wash with soap and water. Cover the irritated skin with an emollient. Get medical attention if irritation develops. Cold water may be used.

#### **Inhalation:**

If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

#### **Ingestion:**

Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately. Loosen tight clothing such as a collar, tie, belt or waistband.

## 5. Fire and Explosion Data

### Products of Combustion:

May be combustible at high temperature.

### Suitable Extinguishing Media:

Water spray. Carbon dioxide (CO<sub>2</sub>). Dry chemical. chemical foam.

### Protective equipment and precautions for firefighters:

Use foam or dry chemical to extinguish fire. Firefighters should wear full fire fighting turn-out gear and respiratory protection (SCBA). Cool container with water spray. Material is not sensitive to mechanical impact or static discharge.

## 6. Accidental Release Measures

### Small Spill:

Use appropriate tools to put the spilled solid in a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.

### Large Spill:

Use a shovel to put the material into a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system.

## 7. Handling and Storage

### Handling:

Use with adequate ventilation and do not breathe dust or vapor. Avoid contact with skin, eyes, or clothing. Wash hands thoroughly after handling.

### Storage:

Keep in a dry, cool and well-ventilated place. Keep container tightly closed. Keep away from heat and sources of ignition. Flammables area.

## 8. Exposure Controls/Personal Protection

### Engineering Controls:

Use explosion-proof electrical/ventilating/lighting/equipment.

### Personal Protection:

Splash goggles. Lab coat. Dust respirator, use an certified respirator or equivalent. Gloves

### Personal Protection in Case of a Large Spill:

Splash goggles. Full suit. Dust respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product.

## 9. Physical and Chemical Properties

|                                       |  |
|---------------------------------------|--|
| <b>Physical state and appearance:</b> | Red-brown liquid.                                    |
| <b>Odor:</b>                          | No odor  |
| <b>Taste:</b>                         | N/A  |
| <b>Molecular Weight:</b>              | 696.68.  |
| <b>pH (1% soln/water):</b>            | pH indicator; 3.0 blue to 5.0 red.                   |
| <b>Boiling Point:</b>                 | N/A  |
| <b>Melting Point:</b>                 | N/A  |
| <b>Critical Temperature:</b>          | N/A  |
| <b>Specific Gravity:</b>              | The only known value is 1 (Water = 1) (Water).       |
| <b>Vapor Pressure:</b>                | The highest known value is 2.3 kPa (@ 20°C) (Water). |
| <b>Vapor Density:</b>                 | The highest known value is 0.62 (Air = 1) (Water).   |
| <b>Volatility:</b>                    | N/A  |
| <b>Odor Threshold:</b>                | N/A  |
| <b>Water/Oil Dist. Coeff.:</b>        | N/A  |

**Ionicity (in Water):** N/A  
**Dispersion Properties:** See solubility in water.  
**Solubility:** Easily soluble in cold water, hot water.

#### 10. Stability and Reactivity

**Stability:** Stable under normal conditions of use and storage.

**Conditions of Instability:** Excess heat, incompatible materials.

**Special Remarks on Reactivity:**

Decomposes on exposure to acid fumes. Avoid contact with oxidizing agents (i.e. perchlorates, peroxide, permanganates, chlorates, nitrates, chlorine, bromine, and fluorine) as a fire or explosion can occur on contact. Incompatible with strong acids (i.e. Hydrochloric, Sulfuric, and Nitric) and reducing agents.

**Polymerization:** Will not occur.

#### 11. Toxicology Information

**Routes of Entry:** Absorbed through skin. Eye contact.

**Acute Symptoms/Signs of exposure:**

**Eyes:**

Redness, tearing, itching, burning, conjunctivitis.

**Skin:**

May cause skin irritation. May cause allergic reaction.

**Ingestion:**

Irritation and burning sensations of mouth and throat, nausea, vomiting and abdominal pain.

**Inhalation:**

Irritation of mucous membranes, coughing, wheezing, shortness of breath.

**Congo Red:**

LD50 [oral, rat]; 15,200 mg/kg; LC50 [rat]; N/A; LD50 Dermal [rabbit]; N/A

Material has not been found to be a carcinogen nor produce genetic, reproductive, or developmental effects.

#### 12. Ecological Information

**Ecotoxicity:** N/A

**BOD5 and COD:** N/A

**Products of Biodegradation:**

Possibly hazardous short term degradation products are not likely.

However, long term degradation products may arise.

#### 13. Disposal Considerations

**Waste Disposal:**

Check with all applicable local, regional, and national laws and regulations. Local regulations may be more stringent than regional or national regulations. Small amounts of this material may be suitable for sanitary sewer or trash disposal.

#### 14. Transport Information

**DOT Classification:** Not a DOT controlled material.

**Identification:** N/A

**Special Provisions for Transport:** N/A

## 15. Regulatory Information

### Federal and State Regulations:

New Jersey: Congo red TSCA 8(b) inventory: Water; Congo red TSCA 5(a)2 proposed significant rules:  
Congo red TSCA 8(d) H and S data reporting: Congo red TSCA 12(b) one time export: Congo red

### HMIS (U.S.A.):

Health Hazard: 2      Fire Hazard: 1      Reactivity: 0      Personal Protection: E

### National Fire Protection Association (U.S.A.):

Health: 2      Flammability: 1      Reactivity: 0      Specific hazard:

## 16. Other Information

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Abbreviations and acronyms:

**ADR:** Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

**IMDG:** International Maritime Code for Dangerous Goods

**DOT:** US Department of Transportation

**IATA:** International Air Transport Association

**ACGIH:** American Conference of Governmental Industrial Hygienists

**NFPA:** National Fire Protection Association (USA)

**HMIS:** Hazardous Materials Identification System (USA)

**LC50:** Lethal concentration, 50 percent LD50: Lethal dose, 50 percent

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**VB 3011-2 Alkaline Alcohol Solution MSDS**

**1. Identification of the Substance/Mixture and Company**

**Identification of the substance or mixture**

**Product Name** Alkaline Alcohol Solution  
**Product number** VB 3011-2  
**Product Description** Kit Component

**Manufacturer/Supplier**

VitroVivo Biotech, LLC. 9605 Medical Center Dr. Suite 315 Rockville, MD 29850  
Phone: 301-500-0499 Toll free: 1-800-260-9817 Fax: 844-248-6208

**2. Composition and Information on Ingredients**

**Composition:**

| Name                | CAS #     |
|---------------------|-----------|
| 1% Sodium hydroxide | 1310-73-2 |
| Ethyl Alcohol       | 64-17-5   |
| Water               | 7732-18-5 |

**3. Hazards Identification**

**Classification of the substance or mixture**

**GHS :**

**Hazard statements:**

Highly flammable liquid and vapor. May cause cancer.

**Precautionary statements:**

Keep away from heat/sparks/open flames/hot surfaces. No smoking. Use explosion-proof electrical/ventilating/lighting/equipment. Wear protective gloves / eye protection / face protection. Ground/bond container and receiving equipment.

Keep container tightly closed.

Use only non-sparking tools.

Take precautionary measures against static discharge.

Obtain special instructions before use.

Do not handle until all safety precautions have been read and understood.

If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

IF exposed or concerned: Get medical advice/attention.

In case of fire: Use for extinction: CO2, powder or water spray.

Store locked up. Store in a well-ventilated place. Keep cool.

Dispose of contents/container in accordance with local/regional/national/international regulations.

**Classification system:**

**NFPA:**

Health : 2                      Fire: 3                      Reactivity : 0

**HMIS:**

Health: 2                      Fire: 3                      Reactivity: 0

**4. First Aid Measures**

**Description of first aid measures**

**General information:** Immediately remove any clothing soiled by the product.

**After inhalation:** Supply fresh air; consult doctor in case of complaints.

**After skin contact:** Immediately rinse with water.

**After eye contact:** Rinse opened eye for several minutes under running water.

**After swallowing:** If symptoms persist consult doctor.

**Information for doctor:**

Most important symptoms and effects, both acute and delayed: N/A

Indication of any immediate medical attention and special treatment need: N/A

## 5. Fire fighting Measures

**Extinguishing media**

**Suitable extinguishing agents:**

CO<sub>2</sub>, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

**Special hazards arising from the substance or mixture:** N/A

**Advice for firefighters Protective equipment:** No special measures required.

## 6. Accidental Release Measures

**Personal protective procedures:**

Wear protective equipment. Keep unprotected persons away.

**Environmental precautions:**

Prevent seepage into sewage system, workpits and cellars.

Dilute with plenty of water.

**Methods for containment and cleaning up:**

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Dispose contaminated material as waste according to item 13.

Ensure adequate ventilation.

## 7. Handling and Storage

**Handling:**

Ensure good ventilation/exhaustion at the workplace.

Open and handle receptacle with care.

**Information about protection against explosions and fires:**

Keep ignition sources away - Do not smoke.

Protect against electrostatic charges.

Keep respiratory protective device available.

**Storage:**

Keep receptacle tightly sealed.

Store in cool, dry conditions in well sealed receptacles.

## 8. Exposure Controls/Personal Protection

**Control parameters**

| <b>Components with limit values that require monitoring at the workplace:</b> |   |
|---|---|
| 64-17-5 ethanol   |   |
| PEL   | Long-term value: 1900 mg/m <sup>3</sup> , 1000 ppm  |
| REL   | Long-term value: 1900 mg/m <sup>3</sup> , 1000 ppm  |
| TLV   | Short-term value: 1880 mg/m <sup>3</sup> , 1000 ppm |

**Exposure controls:**

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing.

Wash hands before breaks and at the end of work.

Store protective clothing separately.

**Breathing equipment:**

In case of brief exposure or low pollution use respiratory filter device.

In case of intensive or longer exposure use respiratory protective device that is independent of

circulating air.

**Protection of hands:** Protective gloves.

**Eye protection:** Tightly sealed goggles.

## 9. Physical and Chemical Properties

### Appearance

**Form:** Liquid  
**Color:** Colorless  
**Odor:** Alcohol-like  
**Odor threshold:** N/A

**pH:** N/A

### Change in condition

**Melting point/Melting range:** N/A  
**Boiling point/Boiling range:** N/A

**Flash point:** 13 °C (55 °F)  
**Flammability (solid, gaseous):** N/A  
**Ignition temperature:** 425 °C (797 °F)  
**Auto igniting:** Product is not selfigniting

**Danger of explosion:** Product is not explosive. However, formation of explosive air/vapor mixtures are possible

**Explosion limits:**  
**Lower:** 3.5 Vol %  
**Upper:** 15.0 Vol %

**Vapor pressure at 20 °C (68 °F):** 59 hPa (44 mm Hg)  
**Solubility in / Miscibility with Water:** Fully miscible

**Other information:** N/A

## 10. Stability and Reactivity

**Reactivity:** N/A

### Chemical stability:

**Possibility of hazardous reactions:** N/A  
**Conditions to avoid:** N/A  
**Incompatible materials:** N/A  
**Hazardous decomposition products:** N/A

## 11. Toxicology Information

### Acute toxicity:

#### Primary irritant effect:

**On the skin:** No irritant effect.  
**On the eye:** No irritating effect.  
**Sensitization:** No sensitizing effects known.

### Carcinogenic categories:

**IARC / NTP / OSHA-Ca:** None of the ingredients are listed.

## 12. Ecological Information

**Ecotoxicity:** No further relevant information available.

**Other adverse effects:** N/A



### 13. Disposal Considerations

**Recommendation:** Disposal must be made according to official regulations.  
**Recommended cleansing agent:** Water, if necessary with cleansing agents.

### 14. Transport Information

**UN-Number**  
**DOT, ADR, IMDG, IATA** UN1993  
**UN proper shipping name**  
**DOT** Flammable liquids, n.o.s. (Ethanol)  
**ADR** 1993 Flammable liquids, n.o.s. (Ethanol)  
**IMDG** Flammable liquids, n.o.s. (Ethanol)  
**IATA** Flammable liquids, n.o.s. (Ethanol)

### 15. Regulatory Information

**California Prop 65:**  
No Significant Risk Level: None of the chemicals in this product are listed.

**Risk Phrases:**

R 11 Highly flammable.  
R20/21/22 Harmful by inhalation, in contact with skin and if swallowed  
R36/38 Irritating to eyes and skin

**Safety Phrases:**

S20/21 When using do not eat, drink or smoke  
S2 Keep out of the reach of children  
S16 Keep away from sources of ignition - No smoking.  
S33 Take precautionary measures against static discharges.  
S7 Keep container tightly closed.  
S9 Keep container in a well-ventilated place

### 16. Other Information

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**ACGIH:** American Conference of Governmental Industrial Hygienists

**NFPA:** National Fire Protection Association (USA)

**HMIS:** Hazardous Materials Identification System (USA)

**LC50:** Lethal concentration, 50 percent LD50: Lethal dose, 50 percent

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## VB-3011-3 Mayer's Hematoxylin Solution MSDS

### 1. Identification of the Substance/Mixture and Company

#### Identification of the substance or mixture

Product Name Mayer's Hematoxylin Solution  
Product number VB-3011-3  
Product Description Kit Component

#### Manufacturer/Supplier

VitroVivo Biotech, LLC 9605 Medical Center Dr. Suite 315, Rockville, MD 29850  
Phone: 301-500-0499 Toll free: 1-800-260-9817 Fax: 844-248-6208

### 2. Composition/Information on Ingredients

#### Composition:

| Name                      | CAS #     | % by weight |
|---------------------------|-----------|-------------|
| Hematoxylin               | 517-28-2  | 0.1         |
| Sodium Iodate             | 7681-55-2 | 0.01        |
| Aluminum Ammonium Sulfate | 7784-26-1 | 5           |
| Acetic Acid               | 64-19-7   | <2          |
| Water                     | 7732-18-5 | Balance     |

### 3. Hazards Identification

#### **GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)**

Acute toxicity, Oral (Category 4), H302

For the full text of the H-Statements mentioned in this Section, see Section 16.

#### **GHS Label elements, including precautionary statements**

Hazard statement(s)

H302 Harmful if swallowed.

Precautionary statement(s)

P264 Wash skin thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.

Rinse mouth.

P501 Dispose of contents/ container to an approved waste disposal plant.

**Hazards not otherwise classified (HNOC) or not covered by GHS - none**

### 4. First Aid Measures

#### **Description of first aid measures**

**General advice** Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

**If inhaled** If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

**In case of skin contact** Wash off with soap and plenty of water. Consult a physician.

**In case of eye contact** Flush eyes with water as a precaution.

**If swallowed** Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

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

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section

11

**Indication of any immediate medical attention and special treatment needed** No data available

### 5. Firefighting Measures

**Extinguishing media**

**Suitable extinguishing media** Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

**Special hazards arising from the substance or mixture** No data available

**Advice for firefighters** Wear self-contained breathing apparatus for firefighting if necessary.

**Further information** No data available

**6. Accidental release measures****Personal precautions, protective equipment and emergency procedures**

Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. For personal protection see section 8.

**Environmental precautions** Do not let product enter drains.

**Methods and materials for containment and cleaning up**

Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

**Reference to other sections** For disposal see section 13.

**7. Handling and Storage****Precautions for safe handling**

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.

For precautions see section 2.2.

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

Keep container tightly closed in a dry and well-ventilated place.

Air and light sensitive.

**Specific end use(s)**

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

**8. Exposure Controls/Personal Protection****Control parameters****Components with workplace control parameters**

Contains no substances with occupational exposure limit values.

Hazardous components without workplace control parameters

**Exposure controls**

**Appropriate engineering controls** Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

**Personal protective equipment**

**Eye/face protection** Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

**Skin protection** Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

**Body Protection**

Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

**Respiratory protection**

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multipurpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

**Control of environmental exposure** Do not let product enter drains.

**9. Physical and Chemical Properties****General information**

|                                  |        |
|----------------------------------|--------|
| <b>Form</b>                      | Liquid |
| <b>Appearance</b>                | N/A    |
| <b>Odor</b>                      | N/A    |
| <b>Odor Threshold</b>            | N/A    |
| <b>Evaporation rate</b>          | N/A    |
| <b>Flammability (solid, gas)</b> | N/A    |

|   |     |
|---|-----|
| <b>Oxidizing properties</b>             | N/A |
| <b>Water solubility</b>                 | N/A |
| <b>Upper explosion limit</b>            | N/A |
| <b>Lower explosion limit</b>            | N/A |
| <b>Vapor Pressure</b>                   | N/A |
| <b>Vapor density</b>                    | N/A |
| <b>Viscosity</b>                        | N/A |
| <b>pH value</b>                         | N/A |
| <b>Boiling point / boiling range °C</b> | N/A |
| <b>Melting point / melting range °C</b> | N/A |
| <b>flash point °C</b>                   | N/A |
| <b>Autoignition Temperature °C</b>      | N/A |

#### 10. Stability and Reactivity

|  |  |
|--|--|
| <b>Reactivity:</b>                         | N/A  |
| <b>Chemical stability:</b>                 | Stable under recommended storage conditions.   |
| <b>Possibility of hazardous reactions:</b> | N/A  |
| <b>Conditions to avoid:</b>                | N/A  |
| <b>Incompatible materials:</b>             | Strong oxidizing agents  |
| <b>Hazardous decomposition products:</b>   | Formed under fire conditions. - Carbon oxides, Nitrogen oxides (NO <sub>x</sub> ), Sulphur oxides, Hydrogen chloride gas, Aluminum oxide |
| <b>Other decomposition products</b>        | N/A  |

#### 11. Toxicology Information

##### Information on toxicological effects

##### Acute toxicity

No toxicology information is available.

##### Potential Health Effects

|                              |  |
|------------------------------|--|
| <b>Eyes</b>                  | May cause eye irritation with susceptible persons. |
| <b>Skin</b>                  | May cause skin irritation in susceptible persons.  |
| <b>Inhalation</b>            | May be harmful by inhalation.                      |
| <b>Ingestion</b>             | May be harmful if swallowed.                       |
| <b>Carcinogenic effects</b>  | None.  |
| <b>Mutagenic effects</b>     | None.  |
| <b>Reproductive toxicity</b> | None.  |
| <b>Sensitization</b>         | None.  |

#### 12. Ecological Information

|  |  |
|--|--|
| <b>Toxicity:</b>                           | N/A  |
| <b>Persistence and degradability:</b>      | N/A  |
| <b>Bioaccumulative potential:</b>          | N/A  |
| <b>Mobility in soil:</b>                   | N/A  |
| <b>Results of PBT and vPvB assessment:</b> | PBT/vPvB assessment not available as chemical safety assessment not required/not conducted |
| <b>Other adverse effects:</b>              | N/A  |

#### 13. Disposal compositions

Dispose of contents/containers in accordance with local regulations.

#### 14. Transport information

|                 |                     |
|-----------------|---------------------|
| <b>DOT (US)</b> | Not dangerous goods |
| <b>IMDG</b>     | Not dangerous goods |
| <b>IATA</b>     | Not dangerous goods |

## 15. Regulatory information

**DOT** Not regulated

### **US Federal Regulations**

#### **SARA 313**

This product is not regulated by SARA.

#### **Clean Air Act, Section 112 Hazardous Air Pollutants (HAPs) (see 40 CFR 61)**

This product does not contain HAPs.

### **US State Regulations**

#### **California Proposition 65**

This product does not contain any Proposition 65 chemicals.

### **WHMIS Hazard Class**

Non-controlled

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

## 16. Other information

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