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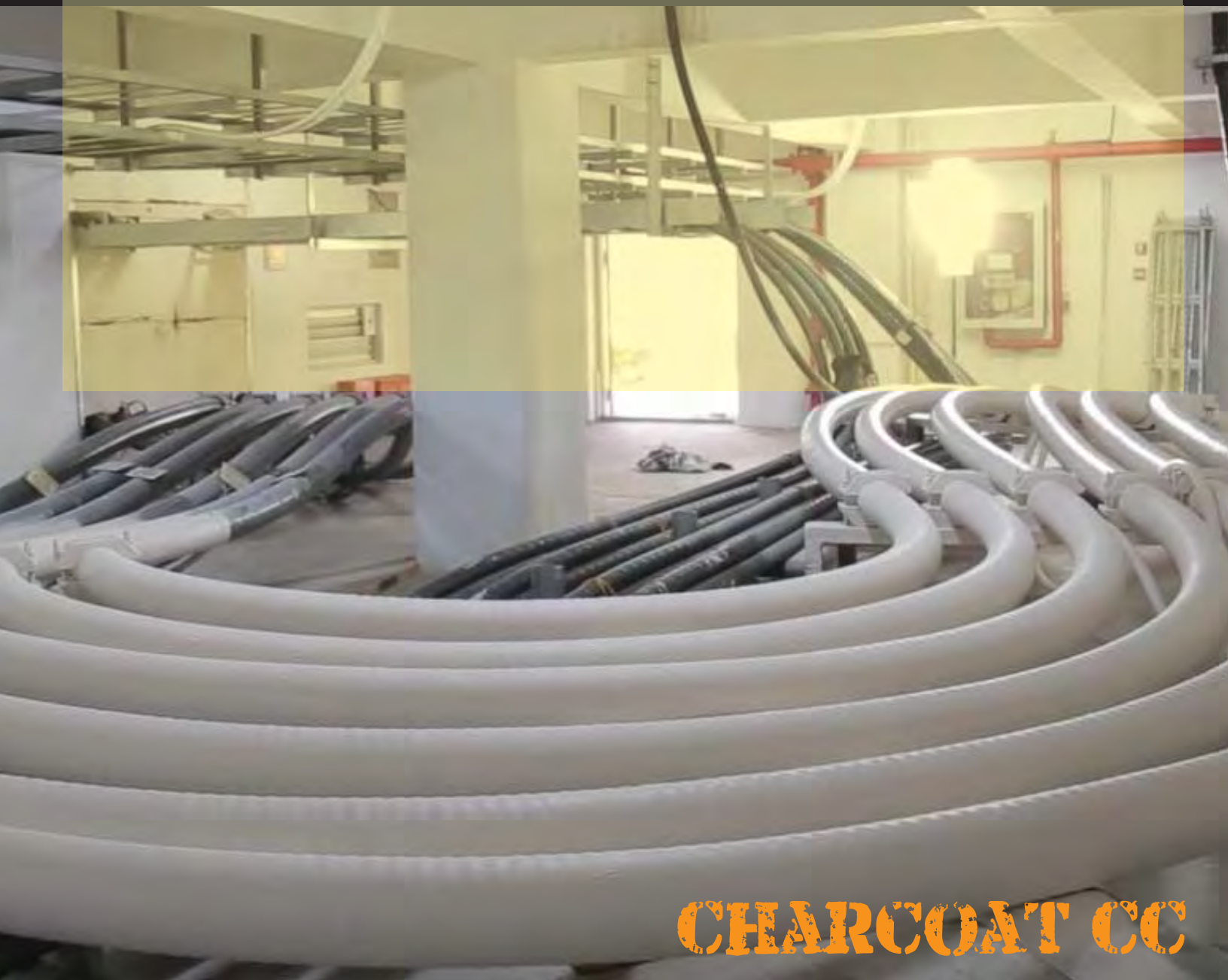
CHARCOAT

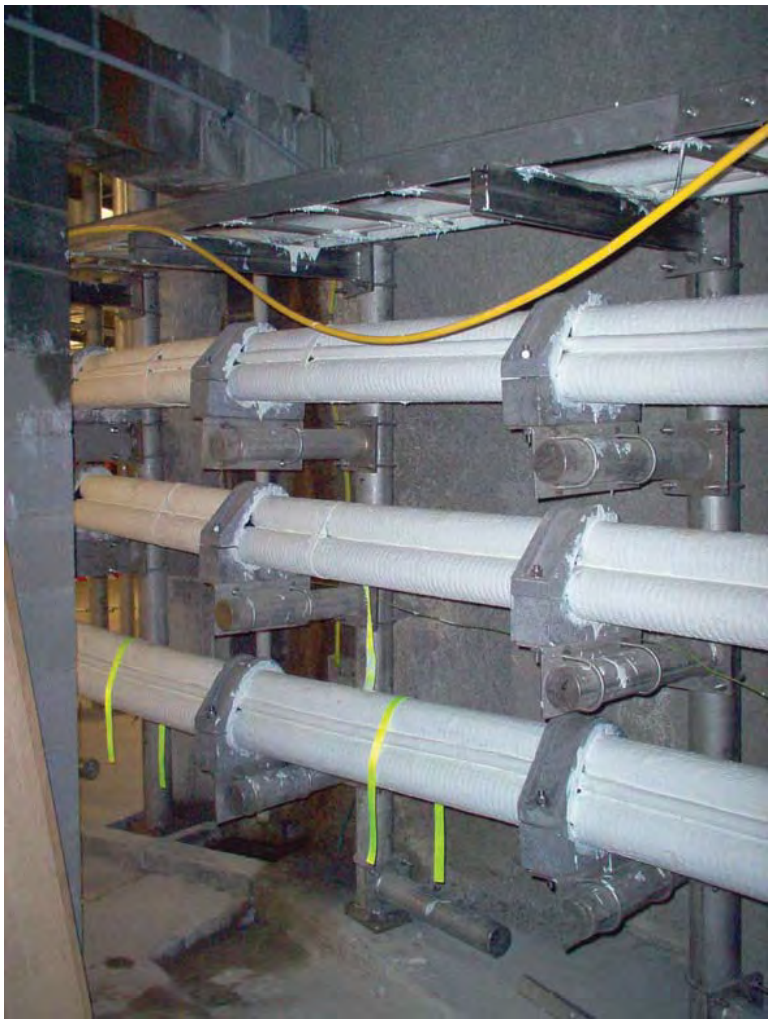
fire Passive Protection

# FIRE RATED CABLE PROTECTION

**Water Based Intumescent Cable Coating for the fire protection of electrical cables up to 90 minutes under Hydrocarbon Conditions**



CHARCOAT CC



# General INFORMATION

CharCoat CC Cable Coating is a water-based Intumescent Latex coating developed for the fire protection of single, grouped or bundled electrical cables.

Originally formulated in the 1980's to prevent spread of flame along the cable surface, CharCoat CC has become the leader in Cable Protection not only withstanding cellulosic fires of 750°C for 90 minutes, but also Hydrocarbon fires (1100°C) on electrical cable(s) for 90 minutes at a very low DFT.

CharCoat CC is a unique acrylic latex emulsion which has excellent resistance to weathering and aging and which remains flexible indefinitely allowing for cable movement and removal. It is suitable for exterior or interior applications. CharCoat CC will also prevent a short circuit within an electrical cable from starting a fire and will help identify the location of such a short circuit by forming an intumescent char at the spot.

CharCoat CC forms a protective intumescent char when exposed to flame or to a temperature above 175°C. This char should be removed completely and clean cables should be recoated if intumescence should occur. There is no need to replace cable that has been subjected to fire as CharCoat CC sacrifices itself to save the cable (as long as the cable is functioning).

CharCoat CC is easily applied by brush or spray and it adheres extremely well to cables and tray, allowing for vertical or overhead application. Care should be taken to see that cables are clean and dry before application, particularly that they are free of oil, grease and dirt. CharCoat CC should be applied in 2 coats to ensure complete coverage.

# Special FEATURES

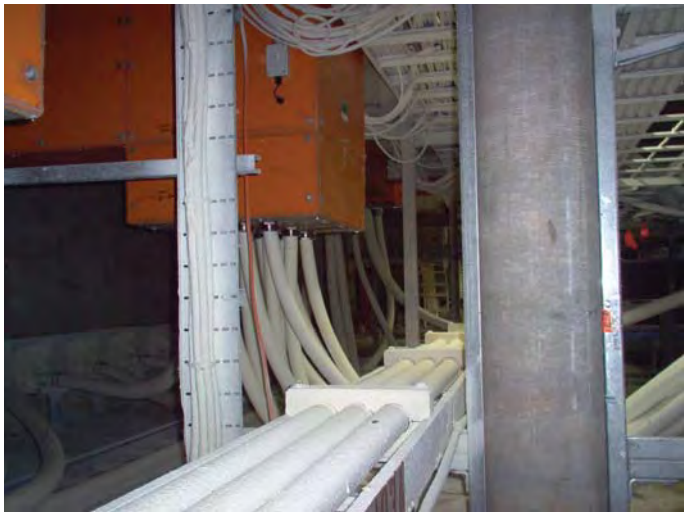
- 600-700% typical intumescent expansion after 10 minutes exposure to 870°C
- Fire rates cable(s) up to 90 minutes at 750°C
- Fire rates cable(s) up to 90 minutes at 1100°C
- Water based Intumescent Latex
- Non-Toxic / Non-Hazardous
- Lightweight, thin-film 2 coat application
- Permanent cost effective solution
- Zero maintenance required
- Single component (stir and spray)
- Solvent, mercury and asbestos free
- Highly fexible in cured form
- 100% UV Stable and certified
- Non-Corrosive
- High resistance to chemicals and acids

# Technical DATA

For exterior cable applications, CharCoat CC also stops UV degradation of the cable sheath as it is a 100% UV stable coating (tested).

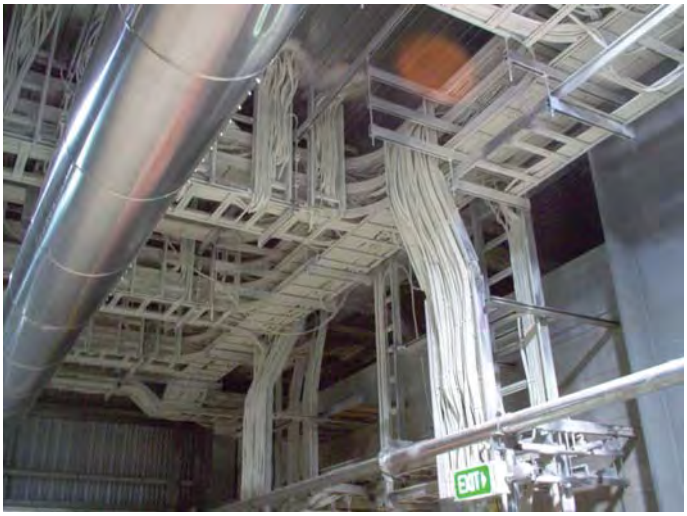
CharCoat CC will last the life time of the cables with applications now over 35 years.

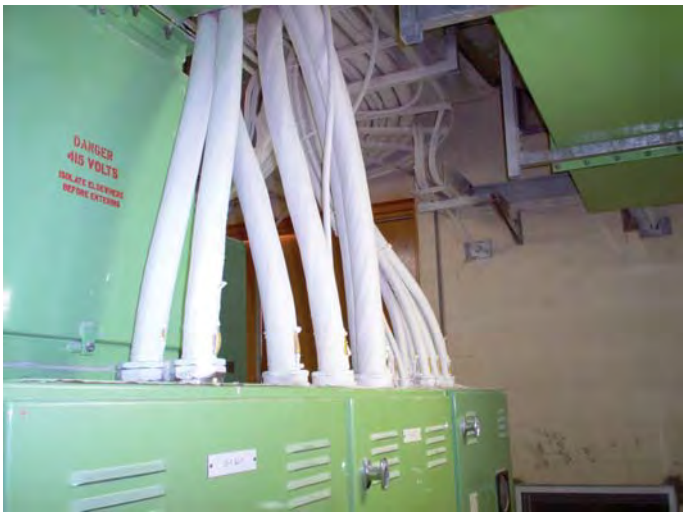
CharCoat CC is typically applied on the following (interior or exterior):
- New and existing electrical cables
- HV and LV cables
- Cable in need of repair



CharCoat CC can also be applied to electrical cables in rooms and areas such as:

- Substations
- Cable Galleries
- Switch Rooms
- Battery Rooms
- Cable Basements
- Transformer Bays / Areas
- Motor Rooms
- Marine applications (ships / rigs)
- Cable Gantries
- Conveyor belts / overlanders






## TRANSPORT / STORAGE

- Transport and store free from frost- preferably at a minimum of +5$^{O}$C to a maximum of +30$^{O}$C.
- shelf-life of unopened pails: 18 month from date of manufacture. Unopened pails must be re-sealed.

## PACKAGING

- 5 gallons (22.5kg)
- Plastic pails
- Other sizes on request

## SURFACE PREPARATION

Please refer to the Technical Data Sheet

## APPLICATION

Please refer to the Technical Data Sheet

## DRYING TIME

Please refer to the Technical Data Sheet

## SAFETY AND THE ENVIRONMENT

Please refer to the Technical Data Sheet

| PRODUCT | FIRE RATING MINUTES |
|---|---|
| CharCoat CC | up to 90 minutes (5000 - 8000v) |
| **APPROVALS** | **DESCRITION** |
| FM3971 | 1.6mm DFT - FM Approved Flame Retardant coating for grouped electrical cables<br>- PASSED - Ampacity<br>- PASSED - Current Carrying Capacity - NON DERATING<br>- PASSED - Salt Water Exposure and immersion<br>- PASSED - Dielectric Strength<br>- PASSED - Flamability Test |
| IEC 60331-11* | 1.6mm DFT - 90 Minute Circuit Intergrity test for cables under fire conditions - 750C |
| IEC 60331-21* | 1.6mm DFT - 90 Minute Circuit Intergrity test for cables under fire conditions - 750C |
| IEC 60331-11 | 1.6mm DFT - 90 Minute Circuit Intergrity test for cables under fire conditions - 1100C |
| IEC 60331-21 | 1.6mm DFT - 90 Minute Circuit Intergrity test for cables under fire conditions - 1100C |
| IEEE-383 | 1.6mm DFT - Flame propagation test |
| ASTM E 84 | 1.6mm DFT - 15 |
| ASTM E 162 | 1.6mm DFT - 16 |
| ASTM D4256-83 | 1.6mm DFT - Radioactivity Decontamination Factor - 5.83 after 10 weeks cure time |
| LEED | Meets requirements for LEED credit 4.1 - 29.95g/L |
| ASTM D2565 | Accelerated UV Stability Test (ASTM G155) - 100% UV Stable - Solar Light Co. Inc. |
| *Cable | IEC 60331-11/21 - tested to 5000V and 8000V HV Power Cable |

CHARCOAT
PASSIVE FIRE PROTECTION

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

### 1.1 Product identifier

**CharCoat CC**

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

#### 1.2.1 Relevant uses

Fire Rated / Retardant Coating

#### 1.2.2 Uses advised against

None known.

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

**Company**

CharCoat Passive Fire Protection
PO Box 18112, Heritage Mountain
Port Moody BC V3H 4H2 Canada
Phone + 1 604 941 1001
Homepage www.CharCoat.com
E-mail mail@CharCoat.com

**Address enquiries to**

**Technical information** mail@CharCoat.com

### 1.4 Emergency telephone number

**Company** + 1 604 941 1001 (24h)

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

No classification.

### 2.2 Label elements

**Hazard pictograms**

**Hazard statements** none

**Special labelling** EUH210 Safety data sheet available on request.

**2004/42/CE** 0 g/l II A i WB One-pack performance coatings (max. 140 g/l)

### 2.3 Other hazards

**Environmental hazards** Does not contain any PBT or vPvB substances.

**Other hazards** No particular hazards known. Mixture is a non-hazardous product

## SECTION 3: Composition / Information on ingredients

**Product-type:**

**The product is a mixture.**

| Range [%] | Substance |
|---|---|
| 0.9-1.5% | Tri(B-chloroethyl) Phosphate \| CAS 115-96-8 |
| 3% | Antimony Oxide \| CAS 1309-64-4 |
| 6-7.5% | Chlorinated Paraffin \| CAS 68410-99-1 68572-02-6 |

**Comment on component parts**

All chemical substances in this material are included on or exempted from listing on the DSL Inventory.
Substances of Very High Concern - SVHC: substances are not contained or are below 0.1%.
All chemical substances in this material are included on or exempted from listing on the TSCA Inventory.
For full text of H-statements: see SECTION 16.

## SECTION 4: First aid measures

### 4.1 Description of first aid measures

**General information**

Change soaked clothing.

**Inhalation**

Ensure supply of fresh air.
In the event of symptoms seek medical treatment.

**Skin contact**

When in contact with the skin, clean with soap and water.
Consult a doctor if skin irritation persists.

**Eye contact**

Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists: Get medical advice/attention.

**Ingestion**

Get medical advice.
Rinse out mouth and give plenty of water to drink.
Do not induce vomiting.

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

Irritant effects

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

Treat symptomatically.

## SECTION 5: Fire-fighting measures

### 5.1 Extinguishing media

**Suitable extinguishing media**

Product itself is non-combustible. Fire extinguishing method of surrounding areas must be considered.

**Extinguishing media that must not be used**

Full water jet.

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

In the event of fire the following can be released: Thermal decomposition will yield CO, CO2, Chlorinated Compounds, HPOX, antimony-oxychloride and traces of fragmented short chain hydrocarbons

### 5.3 Advice for firefighters

Use self-contained breathing apparatus.

Fire residues and contaminated firefighting water must be disposed of in accordance within the local regulations.

## SECTION 6: Accidental release measures

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

High risk of slipping due to leakage/spillage of product.
Use personal protective clothing.

### 6.2 Environmental precautions

Do not discharge into the drains/surface waters/groundwater.

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

Take up mechanically.
Take up residues with absorbent material (e.g. sand, sawdust, general purpose binder, diatomaceous earth).
Dispose of absorbed material in accordance within the regulations.

### 6.4 Reference to other sections

See SECTION 8+13

## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

Provide suitable vacuuming at the processing area.
Use only in well-ventilated areas.

After worktime and before work breaks the affected skin areas must be thoroughly cleaned.
Use barrier skin cream.

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

Keep only in original container.

Do not store together with food and animal food/diet.

Keep container tightly closed.

### 7.3 Specific end use(s)

See product use, SECTION 1.2

## SECTION 8: Exposure controls / personal protection

### 8.1 Control parameters

**Ingredients with occupational exposure limits to be monitored (GB)**

Not Applicable

### 8.2 Exposure controls

| | |
|---|---|
| **Additional advice on system design** | Ensure adequate ventilation on workstation. |
| **Eye protection** | Safety glasses. (EN 166:2001) |
| **Hand protection** | 0,7mm Butyl rubber, >480 min (EN 374).<br>The details concerned are recommendations. Please contact the glove supplier for further information. |
| **Skin protection** | Not required under normal conditions. |
| **Other** | Avoid contact with eyes and skin.<br>Do not breathe vapour/spray. |
| **Respiratory protection** | Breathing apparatus in the event of aerosol or mist formation.<br>Short term: filter apparatus, combination filter A-P2. (DIN EN 14387) |
| **Thermal hazards** | not applicable |
| **Delimitation and monitoring of the environmental exposition** | Comply with applicable environmental regulations limiting discharge to air, water and soil. |

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

| | |
|---|---|
| **Form** | paste |
| **Color** | white |
| **Odor** | Mild Latex Odor |
| **Odour threshold** | not determined |
| **pH-value** | 9.0 |
| **pH-value [1%]** | not determined |
| **Boiling point [°C]** | not determined |
| **Flash point [°C]** | not applicable |
| **Flammability (solid, gas) [°C]** | not applicable |
| **Lower explosion limit** | not applicable |
| **Upper explosion limit** | not applicable |
| **Oxidising properties** | no |
| **Vapour pressure/gas pressure [kPa]** | not determined |
| **Density [g/ml]** | 1.43 |
| **Bulk density [kg/m³]** | not applicable |
| **Solubility in water** | soluble |
| **Partition coefficient [n-octanol/water]** | not determined |
| **Viscosity** | 60,000 – 70,000 cps |
| **Relative vapour density determined in air** | not applicable |
| **Evaporation speed** | not applicable |
| **Melting point [°C]** | not determined |
| **Autoignition temperature [°C]** | not applicable |
| **Decomposition temperature [°C]** | not determined |

### 9.2 Other information

none

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

No dangerous reactions known if used as directed.

### 10.2 Chemical stability

The product is stable under standard conditions.

### 10.3 Possibility of hazardous reactions

Reactions with strong oxidizing agents.

### 10.4 Conditions to avoid

See SECTION 7

### 10.5 Incompatible materials

Strong oxidizing agent.

### 10.6 Hazardous decomposition products

No hazardous decomposition products known.

## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

**Acute toxicity**

| Range [%] | Substance |
|---|---|
| 3% | Antimony Oxide \| CAS 1309-64-4 |

Antimony oxide hazards are presented through inhalation and ingestion, which are unlikely to occur through normal use of this product. The Antimony oxide is encapsulated in the latex matrix and therefore, not respirable. It is also unlikely that enough product could be consumed to cause injury.

| | |
|---|---|
| **Serious eye damage/irritation** | Does not contain a relevant substance that meets the classification criteria.<br>Based on the available information, the classification criteria are not fulfilled.<br>Toxicological data of complete product are not available. |
| **Skin corrosion/irritation** | Based on the available information, the classification criteria are not fulfilled.<br>Toxicological data of complete product are not available. |
| **Respiratory or skin sensitisation** | Does not contain a relevant substance that meets the classification criteria.<br>Based on the available information, the classification criteria are not fulfilled.<br>Toxicological data of complete product are not available. |
| **Specific target organ toxicity — single exposure** | Does not contain a relevant substance that meets the classification criteria.<br>Based on the available information, the classification criteria are not fulfilled.<br>Toxicological data of complete product are not available. |
| **Specific target organ toxicity — repeated exposure** | Does not contain a relevant substance that meets the classification criteria.<br>Based on the available information, the classification criteria are not fulfilled.<br>Toxicological data of complete product are not available. |
| **Mutagenicity** | Does not contain a relevant substance that meets the classification criteria.<br>Based on the available information, the classification criteria are not fulfilled.<br>Toxicological data of complete product are not available. |
| **Reproduction toxicity** | Does not contain a relevant substance that meets the classification criteria.<br>Based on the available information, the classification criteria are not fulfilled.<br>Toxicological data of complete product are not available. |
| **Carcinogenicity** | Does not contain a relevant substance that meets the classification criteria.<br>Based on the available information, the classification criteria are not fulfilled.<br>Toxicological data of complete product are not available. |
| **Aspiration hazard** | Does not contain a relevant substance that meets the classification criteria.<br>Based on the available information, the classification criteria are not fulfilled. |
| **General remarks** | |
| | none |

## SECTION 12: Ecological information

### 12.1 Toxicity

### 12.2 Persistence and degradability

| | |
|---|---|
| **Behaviour in environment compartments** | not determined |
| **Behaviour in sewage plant** | not determined |
| **Biological degradability** | not determined |

### 12.3 Bioaccumulative potential

Accumulation in organisms is not expected.

### 12.4 Mobility in soil

Spillages may penetrate the soil causing ground water contamination.

### 12.5 Results of PBT and vPvB assessment

Based on all available information not to be classified as PBT or vPvB respectively.

### 12.6 Other adverse effects

None known.

## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

Waste material must be disposed of in accordance with the Directive on waste 2008/98/EC as well as other national and local regulations. It is not possible to determine a waste code for this product in accordance with the European Waste Catalogue (EWC) since it is only possible to classify it according to how it is used by the customer. The waste code is to be determined within the EU in liaison with the waste-disposal operator.

**Product**

Coordinate disposal with the authorities if necessary.
For recycling, consult manufacturer.

**Waste no. (recommended)** 080112

**Contaminated packaging**

Packaging that cannot be cleaned should be disposed of as for product.
Uncontaminated packaging may be taken for recycling.

**Waste no. (recommended)** 150102
150104

## SECTION 14: Transport information

### 14.1 UN number

| | |
|---|---|
| **Transport by land according to ADR/RID** | not applicable |
| **Inland navigation (ADN)** | not applicable |
| **Marine transport in accordance with IMDG** | not applicable |
| **Air transport in accordance with IATA** | not applicable |

### 14.2 UN proper shipping name

| | |
|---|---|
| **Transport by land according to ADR/RID** | NO DANGEROUS GOODS |
| **Inland navigation (ADN)** | NO DANGEROUS GOODS |
| **Marine transport in accordance with IMDG** | NOT CLASSIFIED AS "DANGEROUS GOODS" |
| **Air transport in accordance with IATA** | NOT CLASSIFIED AS "DANGEROUS GOODS" |

### 14.3 Transport hazard class(es)

| | |
|---|---|
| **Transport by land according to ADR/RID** | not applicable |
| **Inland navigation (ADN)** | not applicable |
| **Marine transport in accordance with IMDG** | not applicable |
| **Air transport in accordance with IATA** | not applicable |

### 14.4 Packing group

| | |
|---|---|
| **Transport by land according to ADR/RID** | not applicable |
| **Inland navigation (ADN)** | not applicable |
| **Marine transport in accordance with IMDG** | not applicable |
| **Air transport in accordance with IATA** | not applicable |

### 14.5 Environmental hazards

| | |
|---|---|
| **Transport by land according to ADR/RID** | no |
| **Inland navigation (ADN)** | no |
| **Marine transport in accordance with IMDG** | no |
| **Air transport in accordance with IATA** | no |

### 14.6 Special precautions for user

Relevant information under SECTION 6 to 8.

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

not applicable

## SECTION 15: Regulatory information

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

| | |
|---|---|
| **EEC-REGULATIONS** | 1991/689 (2001/118); 1999/13; 2004/42; 648/2004; 1907/2006 (REACH); 1272/2008; 75/324/EEC (2008/47/EC); 453/2010/EC; (EU) 2015/830 |
| **TRANSPORT-REGULATIONS** | DOT-Classification, ADR (2015); IMDG-Code (2015, 37. Amdt.); IATA-DGR (2016). |
| **NATIONAL REGULATIONS (GB):** | EH40/2005 Workplace exposure limits (Second edition, published December 2011). CHIP 3/ CHIP 4 |
| **- Observe employment restrictions for people** | none |
| **- VOC (1999/13/CE)** | not applicable |

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### 15.2 Chemical safety assessment

not applicable

## SECTION 16: Other information

### 16.1 Hazard statements (SECTION 03)

H315 Causes skin irritation.

### 16.2 Abbreviations and acronyms:

ADR = Accord européen relatif au transport international des marchandises Dangereuses par Route
RID = Règlement concernant le transport international ferroviaire de marchandises dangereuses
ADN = Accord européen relatif au transport international des marchandises dangereuses par voie de navigation intérieure
CAS = Chemical Abstracts Service
CLP = Classification, Labelling and Packaging
DMEL = Derived Minimum Effect Level
DNEL = Derived No Effect Level
EC50 = Median effective concentration
ECB = European Chemicals Bureau
EEC = European Economic Community
EINECS = European Inventory of Existing Commercial Chemical Substances
ELINCS = European List of Notified Chemical Substances
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC-Code = International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk
IC50 = Inhibition concentration, 50%
IMDG = International Maritime Code for Dangerous Goods
IUCLID = International Uniform ChemicaL Information Database
LC50 = Lethal concentration, 50%
LD50 = Median lethal dose
MARPOL = International Convention for the Prevention of Marine Pollution from Ships
PBT = Persistent, Bioaccumulative and Toxic substance
PNEC = Predicted No-Effect Concentration
REACH = Registration, Evaluation, Authorisation and Restriction of Chemicals
TLV®/TWA = Threshold limit value – time-weighted average
TLV®STEL = Threshold limit value – short-time exposure limit
VOC = Volatile Organic Compounds
vPvB = very Persistent and very Bioaccumulative

### 16.3 Other information

**Classification procedure**

**Modified position** SECTION 6 deleted: Prevent spread over a wide area (e.g. by containment or oil barriers).