

In accordance with the requirements of the OSHA Hazard Communication Standard, 29CFR 1910.1200

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|  | BRUGAL TOC 600G (65)<br>Code: 41006 |  |
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**SECTION 1 : IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING**


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| 1.1 | <p><u>PRODUCT IDENTIFIER:</u> BRUGAL GM4-RTU (65)<br/>Code: 41006</p>  |  |
| 1.2 | <p><u>RELEVANT IDENTIFIED USES AND USES ADVISED AGAINST:</u><br/> <u>Intended uses (main technical functions):</u> <span style="float: right;">[X] Industrial [ ] Professional</span><br/>                 Pasivante de metales.<br/> <u>Uses advised against:</u><br/>                 This product is not recommended for any use or sector of use industrial, professional or consume other than those previously listed as 'Intended or identified uses'. For professional use only. If your use is not covered, please contact the supplier of this material safety data sheet.<br/> <u>Restrictions on manufacture, placing on market and use, according to Annex XVII of Regulation (EC) No. 1907/ 2006:</u><br/>                 Contains: C contains substances CMR, categories 1 or 2: Restricted to professional users. Forbidden to the general public. The restrictions do not apply to storage, keeping, treatment, filling into containers, or transfer from one container to another of the substances for export. See entry 28 and/or 29 and/or 30 in the Annex of the Regulation (EC) No. 552/2009-276/2010.</p> |  |
| 1.3 | <p><u>DETAILS OF THE SUPPLIER OF THE SAFETY DATA SHEET:</u><br/>                 TECCOAT<br/>                 3830 Rose Lake Drive - Charlotte, NC 28217 (USA)<br/>                 Phone: +01 773.249.4210 D - Fax: +01 773.388.0893<br/> <u>E-mail address of the person responsible for the safety data sheet:</u><br/>                 e-mail: dkelley@teccoat.com</p>   |  |
| 1.4 | <p><u>EMERGENCY TELEPHONE NUMBER:</u> 800-424-9300 (Domestic North America - Chemtrec)</p>   |  |

**SECTION 2 : HAZARDS IDENTIFICATION**






|     |  |  |   |        |   |              |   |            |   |     |
|-----|--|--|---|--------|---|--------------|---|------------|---|-----|
| 2.1 | <p><u>HMIS HAZARD RATINGS:</u></p>   | <table border="1" style="display: inline-table; vertical-align: top;"> <tr><td style="background-color: cyan;">4</td><td style="background-color: cyan;">HEALTH</td></tr> <tr><td style="background-color: red;">0</td><td style="background-color: red;">FLAMMABILITY</td></tr> <tr><td style="background-color: yellow;">2</td><td style="background-color: yellow;">REACTIVITY</td></tr> <tr><td style="background-color: white;">G</td><td style="background-color: white;">PPE</td></tr> </table> <p>(4) Severe chronic health hazard<br/>                 (0) Minimal flammability hazard<br/>                 (2) Moderate physicochemical hazard<br/>                 (G) Safety glasses, gloves and vapor respirator</p> <p>Note: HMIS Hazard Ratings involve data and interpretations that may vary from company to company. They are intended only for rapid, general identification of the magnitude of the specific hazard. To deal adequately with the safe handling of the material, all the information contained in this MSDS must be considered.</p> | 4 | HEALTH | 0 | FLAMMABILITY | 2 | REACTIVITY | G | PPE |
| 4   | HEALTH   |  |   |        |   |              |   |            |   |     |
| 0   | FLAMMABILITY   |  |   |        |   |              |   |            |   |     |
| 2   | REACTIVITY   |  |   |        |   |              |   |            |   |     |
| G   | PPE  |  |   |        |   |              |   |            |   |     |
| 2.2 | <p><u>LABEL ELEMENTS:</u></p> <div style="display: flex; align-items: center;"> <div style="margin-right: 20px;"> </div> <div> <p>T, N</p> <p>This product is labelled as TOXIC and DANGEROUS FOR THE ENVIRONMENT</p> </div> </div> <p><u>R-phrases:</u><br/>                 R45 May cause cancer.<br/>                 R46 May cause heritable genetic damage.<br/>                 R23 Also toxic by inhalation.<br/>                 R36/38 Irritating to eyes and skin.<br/>                 R42/43 May cause sensitization by inhalation and skin contact.<br/>                 R48/20 Also harmful: danger of serious damage to health by prolonged exposure through inhalation.<br/>                 R51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.</p> <p><u>S-phrases:</u><br/>                 S53 Avoid exposure - obtain special instructions before use.<br/>                 S36/37 Wear suitable protective clothing and gloves.<br/>                 S45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).<br/>                 S51 Use only in well-ventilated areas.</p> <p><u>Supplementary statements:</u><br/>                 P95 Restricted to professional users.</p> <p><u>Hazardous ingredients:</u><br/>                 Chromium(VI) trioxide</p> |  |   |        |   |              |   |            |   |     |

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| 2.3 | <p><u>OTHER HAZARDS:</u></p> | <p>Hazards which do not result in classification but which may contribute to the overall hazards of the mixture:<br/> <u>Other physicochemical hazards:</u> No other relevant adverse effects are known.<br/> <u>Other adverse human health effects:</u> No other relevant adverse effects are known.<br/> <u>Other negative environmental effects:</u> Not applicable.</p> |
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**SECTION 3 : COMPOSITION / INFORMATION ON INGREDIENTS**


|     |  |  |   |
|-----|--|--|---|
| 3.1 | <b>SUBSTANCES:</b>   | No aplicable (mezcla).   |   |
| 3.2 | <b>MIXTURES:</b>   | This product is a mixture.<br><b>Chemical description:</b><br>Solution of water in aqueous media.<br><b>Hazardous ingredients:</b><br>Substances taking part in a percentage higher than the exemption limit:  |   |
|     | 2,5 < 5 %<br><input type="checkbox"/>  <input type="checkbox"/>   | <b>Orthophosphoric acid</b><br>CAS: 7664-38-2 , EC: 231-633-2<br>DSD: C:R34<br>CLP: Skin Corr. 1B:H314   | Index No. 015-011-00-6<br>(Note B) < ATP12<br>< CLP00 |
|     | 1 < 2,5 %<br>   | <b>Chromium(VI) trioxide</b><br>CAS: 1333-82-0 , EC: 215-607-8<br>DSD: O:R9   Carc.Cat.1:R45   Muta.Cat.2:R46   Repr.Cat.3:R62   T+:R26   T:R24/25-48/23   C:R35   R42/43   N:R50-53<br>CLP: Ox. Sol. 1:H 271   Acute Tox. (inh.) 2:H330   Acute Tox. (skin) 3:H311   Acute Tox. (oral) 3:H301   Skin Corr. 1A:H314   Resp. Sens. 1:H334   Skin Sens. 1:H317   Muta. 1B: H340   Carc. 1A:H350   Repr. 2:H 361f   STOT SE (irrit.) 3: H335   STOT RE 1:H 372i   Aquatic Acute 1:H400   Aquatic Chronic 1:H410 | Index No. 024-001-00-0<br>< ATP29<br>< CLP00          |
|     | 1 < 2,5 %<br><input type="checkbox"/> <input type="checkbox"/>    | <b>Zinc oxide</b><br>CAS: 1314-13-2 , EC: 215-222-5<br>DSD: N:R50-53<br>CLP: Aquatic Acute 1:H400   Aquatic Chronic 1:H410   | Index No. 030-013-00-7<br>< ATP29<br>< CLP00          |
|     | <b>Impurities:</b>   | Does not contain other components of impurities which will influence the classification of the product.  |   |
|     | <b>Reference to other sections:</b>  | For more information on hazardous ingredients, see sections 8, 11, 12 and 16.  |   |

**SECTION 4 : FIRST AID MEASURES**

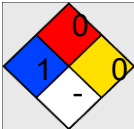
|     |  |  |  |
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| 4.1 | <b>DESCRIPTION OF FIRST-AID MEASURES AND MAIN SYMPTOMS AND EFFECTS, ACUTE AND DELAYED:</b> |  |  |
| 4.2 |         | In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). Never give anything by mouth to an unconscious person. Lifeguards should pay attention to self-protection and use the recommended protective equipment if there is a possibility of exposure. Wear protective gloves when administering first aid. |  |
|     | <b>Route of exposure</b>   | <b>Symptoms and effects, acute and delayed</b>   | <b>Description of first-aid measures</b>   |
|     | <b>Inhalation:</b>   | Inhalation produces irritation to mucus, coughing and breathlessness.  | Remove the patient out of the contaminated area into the fresh air. If breathing is irregular or stops, administer artificial respiration. If the person is unconscious, place in appropriate recovery position. Keep the patient warm and at rest until medical attention arrives.      |
|     | <b>Skin:</b>   | Skin contact causes redness.   | Remove immediately contaminated clothing. Wash thoroughly the affected area with plenty of cold or lukewarm water and a solution of 5% sodium bicarbonate. Finally, rewash the affected area with soap and water. In the case of skin reddening or rashes, contact a doctor immediately. |
|     | <b>Eyes:</b>   | Contact with the eyes produces redness and pain.   | Rinse eyes copiously by irrigation with plenty of clean, fresh water for at least 15 minutes, holding the eyelids apart, until the irritation is reduced. Remove contact lenses. Call a physician immediately.   |
|     | <b>Ingestion:</b>  | If swallowed, may cause irritation of the mouth, throat and esophagus.   | If swallowed, seek immediate medical attention. Due to its acid condition, the effects can be reduced to a minimum by drinking plenty of water, to which milk of magnesia has been added. Do not induce vomiting, due to the risk of aspiration. Keep the patient at rest.               |

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| 4.3 | <b>INDICATION OF ANY IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDED:</b>  |  |  |
|     | <b>Notes to physician:</b> Specific treatment is necessary in case of exposition with this substance: the appropriate means with instructions must be available.<br><b>Antidotes and contraindications:</b> Specific antidote not know. |  |  |

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**SECTION 5 : FIRE-FIGHTING MEASURES**

|                  |   |
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| Not combustible. |   |
| 5.1              | <p><b>EXTINGUISHING MEDIA:</b><br/>                 In the case of fire in the surroundings, all extinguishing agents are allowed.</p>  |
| 5.2              | <p><b>SPECIAL HAZARDS ARISING FROM THE SUBSTANCE OR MIXTURE:</b><br/>                 Irritant.</p> <div style="display: flex; align-items: center; justify-content: space-between;">  <div style="margin-left: 20px;"> <p><b>ANSI/N FPA 704:</b><br/>                     Health: 1<br/>                     Flammability: 0<br/>                     Reactivity: 0<br/>                     Special key: -</p> </div> </div>   |
| 5.3              | <p><b>ADVICE FOR FIRE FIGHTERS:</b><br/> <u>Special protective equipment:</u> Depending on magnitude of fire, heat-proof protective clothing may be required, appropriate independent breathing apparatus, gloves, protective glasses or face masks and boots. If the fire-proof protective equipment is not available or not used, combat fire from a sheltered position or at a safe distance. The standard EN469 provides a basic level of protection for chemical incidents.<br/> <u>Other recommendations:</u> Cool with water the tanks, cylinders or containers close to sources of heat or fire. Bear in mind the direction of the wind. Do not allow fire-fighting residue to enter drains, sewers or water courses.</p> |


**SECTION 6 : ACCIDENTAL RELEASE MEASURES**

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| 6.1 | <p><b>PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES:</b><br/>                 Avoid direct contact with this product.</p>  |
| 6.2 | <p><b>ENVIRONMENTAL PRECAUTIONS:</b><br/>                 Avoid contamination of drains, surface or subterranean water and soil. In the case of large scale spills or when the product contaminates lakes, rivers or sewages, inform the appropriate authorities in accordance with local regulations.</p>   |
| 6.3 | <p><b>METHODS AND MATERIAL FOR CONTAINMENT AND CLEANING UP:</b><br/>                 Contain and mop up spills with absorbent materials (sawdust, earth, sand, vermiculite, diatomaceous earth, etc...). Transfer to a suitable container for recovery or elimination. Neutralize with carbonate or sodium bicarbonate. Keep the remains in a closed container. Finally, clean up the area with plenty of water.</p> |
| 6.4 | <p><b>REFERENCE TO OTHER SECTIONS:</b><br/>                 For contact information in case of emergency, see section 1.<br/>                 For information on safe handling, see section 7.<br/>                 For exposure controls and personal protection measures, see section 8.<br/>                 For subsequent waste disposal, follow the recommendations in section 13.</p>                         |

**SECTION 7 : HANDLING AND STORAGE**

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| 7.1 | <p><b>PRECAUTIONS FOR SAFE HANDLING:</b><br/>                 Comply with the existing legislation on health and safety at work.<br/> <u>General recommendations:</u><br/>                 Avoid any type of leakage or escape. Keep the container tightly closed.<br/> <u>Recommendations for the prevention of fire and explosion risks:</u><br/>                 Not applicable.<br/> <u>Recommendations for the prevention of toxicological risks:</u><br/>                 Do not eat, drink or smoke while handling. After handling, wash hands with soap and water. For exposure controls and personal protection measures, see section 8.<br/> <u>Recommendations for the prevention of environmental contamination:</u><br/>                 Product dangerous to the environment. Avoid any spillage in the environment. Pay special attention to the cleaning water. In the case of accidental spillage, follow the instructions indicated in section 6.</p> |
| 7.2 | <p><b>CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES:</b><br/>                 Prevent unauthorized access. If possible, avoid direct contact with sunlight. In order to avoid leakages, the containers, after use, should be closed carefully and placed in a vertical position. For more information, see section 10.<br/> <u>Class of store</u> : According to current legislation.<br/> <u>Maximum storage period</u> : 1. months<br/> <u>Temperature interval</u> : min: 5. °C , max: 40. °C<br/> <u>Incompatible materials:</u><br/>                 Keep away from reducing agents, oxidizing agents, acids, alkalis, amines, alcohols, ketones, metals, combustible materials.<br/> <u>Type of packaging:</u><br/>                 According to current legislation.<br/> <u>Limit quantity (Seveso III): Directive 96/ 82/EC~2003/105/EC:</u><br/>                 Lower threshold: 50 tons , Upper threshold: 200 tons</p>                      |
| 7.3 | <p><b>SPECIFIC END USES:</b><br/>                 For the use of this product do not exist particular recommendations apart from that already indicated.</p>  |

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**SECTION 8 : EXPOSURE CONTROLS/ PERSONAL PROTECTION**

**8.1 CONTROL PARAMETERS:**  
 If a product contains ingredients with exposure limits, may be necessary a personnel monitoring, work place or biological, to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to EN 689 standard concerning methods for assessing the exposure by inhalation to chemical agents and national guidance documents for methods for the determination of dangerous substances.

OCCUPATIONAL EXPOSURE LIMIT VALUES (TLV)

| AGCIH 2011            | Year | TLV-TWA |        | TLV-STEL |       | Observations                   |
|-----------------------|------|---------|--------|----------|-------|--------------------------------|
|                       |      | ppm     | mg/ m3 | ppm      | mg/m3 |                                |
| Orthophosphoric acid  | 1976 | -       | 1.0    | -        | 3.0   | A1<br>As C r<br>Breathe powder |
| Chromium(VI) trioxide | 1994 | -       | 0.050  | -        | -     |                                |
| Zinc oxide            | 2003 | -       | 2.0    | -        | 10.   |                                |

TLV - Threshold Limit Value, TWA - Time Weighted Average, STEL - Short Term Exposure Limit.  
 A1 - Confirmed carcinogenic in humans.

BIOLOGICAL LIMIT VALUES:

Not available

DERIVED NO-EFFECT LEVEL (DNEL):

Derived no-effect level (DNEL) is a level of exposure that is considered safe, derived from toxicity data according to specific guidances included in REACH. DNEL values may differ from a occupational exposure limit (OEL) for the same chemical. OEL values may come recommended by a particular company, a government regulatory agency or an organization of experts. Although considered protective of health, the OEL values are derived by a process different of REACH.

|  |                                  |                                       |                                  |
|--|----------------------------------|---------------------------------------|----------------------------------|
| <u>Derived no-effect level, workers:</u><br>- Systemic effects, acute and chronic:<br>No disponible (sin datos de registro REACH). | <u>DNEL Inhalation</u><br>mg/ m3 | <u>DNEL Cutaneous</u><br>mg/ kg bw/ d | <u>DNEL Oral</u><br>mg/ kg bw/ d |
|  | -                                | -                                     | -                                |
| <u>Derived no-effect level, workers:</u><br>- Local effects, acute and chronic:<br>No disponible (sin datos de registro REACH).    | <u>DNEL Inhalation</u><br>mg/ m3 | <u>DNEL Cutaneous</u><br>mg/ cm 2     | <u>DNEL Ojos</u><br>mg/ cm 2     |
|  | -                                | -                                     | -                                |

Derived no-effect level, general population:  
 No aplicable (producto para uso industrial).

PREDICTED NO-EFFECT CONCENTRATION (PNEC):

|   |                                  |  |  |
|---|----------------------------------|--|--|
| <u>Predicted no-effect concentration, aquatic organisms:</u><br>- Fresh water, marine water and intermittent release:<br>No disponible (sin datos de registro REACH). | <u>PNEC Fresh water</u><br>mg/ l | <u>PNEC Marine</u><br>mg/ l                | <u>PNEC Intermittente</u><br>mg/ l         |
|   | -                                | -  | -  |
| - Wastewater treatment plants (STP) and sediments in fresh- and marine water:<br>No disponible (sin datos de registro REACH).   | <u>PNEC STP</u><br>mg/ l         | <u>PNEC Sediments</u><br>mg/ kg dry weight | <u>PNEC Sediments</u><br>mg/ kg dry weight |
|   | -                                | -  | -  |
| <u>Predicted no-effect concentration, terrestrial organisms:</u><br>- Air, soil and effects for predators and humans:<br>No disponible (sin datos de registro REACH). | <u>PNEC Aire</u><br>mg/ m3       | <u>PNEC Soil</u><br>mg/ kg dry weight      | <u>PNEC Oral</u><br>mg/ kg bw/ d           |
|   | -                                | -  | -  |

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**8.2 EXPOSURE CONTROLS:**

ENGINEERING MEASURES:



Provide adequate ventilation. Where reasonably practicable, this should be achieved by the use of local exhaust ventilation and good general extraction.

Protection of respiratory system:

Protection of eyes and face: It is recommended to install emergency eye baths close to the working area.

Protection of hands and skin: It is recommended to install emergency showers close to the working area. Barrier creams may help to protect the exposed areas of the skin. Barrier creams should not be applied once exposure has occurred.

OCUPATIONAL EXPOSURE CONTROLS: Directive 89/686/EEC ~96/58/EC:

As a general measure on prevention and safety in the work place, we recommend the use of a basic personal protection equipment (PPE), with the corresponding EC marking. For more information on personal protective equipment (storage, use, cleaning, maintenance, type and characteristics of the PPE, protection class, marking, category, CEN norm, etc.), you should consult the informative brochures provided by the manufacturers of PPE.

Mask:



Mask for gases and vapours (OSHA 29CFR 1910.134 and ANSI Z88.2). Classe 1: low capacity up to 1000 ppm, Classe 2: medium capacity up to 5000 ppm, Classe 3: high capacity up to 10000 ppm. In order to obtain a suitable protection level, the filter class must be selected depending on the type and concentration of the contaminating agents present, in accordance with the specifications supplied by the filter producers.

Goggles:



Safety goggles with suitable lateral protection (OSHA 29CFR 1910.133). Clean daily and disinfect at regular intervals in accordance with the instructions of the manufacturer.

Face shield:

No.

Gloves:



Gloves resistant against chemicals (OSHA 29CFR 1910.132). When it can be a repeated or prolonged contact, it is recommended to use gloves with a protection level 5 or higher, with a breakthrough time >240 min. When you only expects a short contact, it is recommended to use gloves with a protection level 2 or higher, with a breakthrough time >30 min. The breakthrough time of the selected glove material should be in accordance with the pretended period of use. There are several factors (for example, temperature), they do in practice the period of use of a protective gloves resistant against chemicals is clearly lower than the established standard OSHA 29CFR 1910.132. Due to the wide variety of circumstances and possibilities, we must have in mind the manual of instructions from manufacturers of gloves. Use the proper technique of removing gloves (without touching gloves' outer surface) to avoid contact of the product with the skin. The gloves should be immediately replaced when any sign of degradation is noted.

Boots:

No.

Apron:

No.

Clothing:

Advisable. Put away work clothes under control and separately from the rest. Do not take contaminated clothing home. Wash contaminated work clothes before wearing them again.

Thermal hazards:

Not applicable (the product is handled at room temperature).

ENVIRONMENTAL EXPOSURE CONTROLS:


Avoid any spillage in the environment.

Spills on the soil: Prevent contamination of soil.

Spills in water: Toxic to aquatic organisms. May cause long-term adverse effects on the aquatic environment. Do not allow to escape into drains, sewers or water courses.

Emissions to the atmosphere: Not applicable.

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**SECTION 9 : PHYSICAL AND CHEMICAL PROPERTIES**

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| 9.1 | <p><u>INFORMATION ON BASIC PHYSICAL AND CHEMICAL PROPERTIES:</u></p> <p><u>Appearance</u></p> <ul style="list-style-type: none"> <li>- Physical state : Liquid.</li> <li>- Colour : Yellow.</li> <li>- Odour : Characteristic</li> <li>- Odour threshold : No disponible (mezcla).</li> </ul> <p><u>pH-value</u></p> <ul style="list-style-type: none"> <li>- pH : # 3.5 at 20°C</li> </ul> <p><u>Change of state</u></p> <ul style="list-style-type: none"> <li>- Melting point : Not available</li> <li>- Initial boiling point : &gt; 100. °C at 760 mm Hg</li> </ul> <p><u>Density</u></p> <ul style="list-style-type: none"> <li>- Densidad relativa : 1.1 at 20/4°C (agua=1)</li> </ul> <p><u>Stability</u></p> <ul style="list-style-type: none"> <li>- Decomposition temperature : Not applicable</li> </ul> <p><u>Viscosity:</u></p> <ul style="list-style-type: none"> <li>- Viscosity : Not available</li> </ul> <p><u>Volatility:</u></p> <ul style="list-style-type: none"> <li>- Vapour pressure : Not available</li> </ul> <p><u>Solubility(ies)</u></p> <ul style="list-style-type: none"> <li>- Solubility in water: : Miscible</li> <li>- Solubility in oils and fats: : Not available</li> </ul> <p><u>Flammability:</u></p> <ul style="list-style-type: none"> <li>- Flash point : Not combustible.</li> <li>- Autoignition temperature : Not applicable</li> </ul> <p><u>Explosive properties:</u><br/>Not available.</p> <p><u>Oxidizing properties:</u><br/>Based on the chemical structure of the ingredients of the mixture, is unable to react with combustible materials.</p> |
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| 9.2 | <p><u>OTHER INFORMATION:</u></p> <ul style="list-style-type: none"> <li>- Heat of combustion : 1073. Kcal/kg</li> <li>- Solids : 26.5 % Weight</li> </ul> <p>The values indicated do not always coincide with product specifications. The data for the product specifications can be found in the technical data sheet of the same. For additional information concerning physical and chemical properties related to safety and environment, see sections 7 and 12.</p> |
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**SECTION 10 : STABILITY AND REACTIVITY**

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| 10.1 | <p><u>REACTIVITY:</u></p> <p><u>Corrosivity to metals:</u> It is not corrosive to metals.</p> <p><u>Pyrophorical properties:</u> It is not pyrophoric.</p>  |
| 10.2 | <p><u>CHEMICAL STABILITY:</u></p> <p>Stable under recommended storage and handling conditions .</p>   |
| 10.3 | <p><u>POSSIBILITY OF HAZARDOUS REACTIONS:</u></p> <p>Possible dangerous reaction with reducing agents, oxidizing agents, acids , alkalis, amines, alcohols, ketones, metals, combustible materials .</p>                  |
| 10.4 | <p><u>CONDITIONS TO AVOID:</u></p> <p><u>Light:</u> If possible, avoid direct contact with sunlight.</p> <p><u>Air:</u> Not applicable.</p> <p><u>Pressure:</u> Not applicable.</p> <p><u>Shock :</u> Not applicable.</p> |
| 10.5 | <p><u>INCOMPATIBLE MATERIALS:</u></p> <p>Keep away from reducing agents, oxidizing agents, acids, alkalis, amines, alcohols, ketones, metals, combustible materials.</p>  |

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| 10.6 | <p><u>HAZARDOUS DECOMPOSITION PRODUCTS:</u></p> <p>As consequence of thermal decomposition, hazardous products may be produced: oxygen, phosphorus oxides.</p> |
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**SECTION 11 : TOXICOLOGICAL INFORMATION**

No experimental toxicological data on the preparation is available. The toxicological classification for these preparation has been carried out by using the conventional calculation method of the Directive 1999/45/EC~2006/8/EC.

**11.1 INFORMATION ON TOXICOLOGICAL EFFECTS:**

ACUTE TOXICITY:

Dose and lethal concentrations for individual ingredients :

|                      | <u>DL50 (OECD 401)</u><br>mg/ kg oral | <u>DL50 (OECD 402)</u><br>mg/ kg cutaneous | <u>CL50 (OECD 403)</u><br>mg/ m3.4h inhalation |
|----------------------|---------------------------------------|--|--|
| Orthophosphoric acid | 1530. Rat                             | 2740. Rabbit                               |  |
| Chromium(VI)trioxide | 80. Rat                               | 57. Rabbit                                 | > 217. Rat                                     |
| Zinc oxide           | > 5000. Rat                           |  | > 5700. Rat                                    |

No observed adverse effect level

Not available

Lowest observed adverse effect level

Not available

INFORMATION ON LIKELY ROUTES OF EXPOSURE: Acute toxicity:

Inhalation: TOXIC: Toxic if inhaled.

Skin: Not classified as a product with acute toxicity in contact with skin.

Eyes: Not classified as a product with acute toxicity by eye contact.

Ingestion: Not classified as a product with acute toxicity if swallowed.

CORROSION / IRRITATION / SENSITISATION :

Respiratory corrosion/irritation: Not classified as a product corrosive or irritant by inhalation.

Skin corrosion/irritation: IRRITANT : Causes skin irritation.

Serious eye damage/irritation: IRRITANT : Causes serious eye irritation.

Respiratory sensitisation: SENSITISING: May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Skin sensitisation: SENSITISING: May cause an allergic skin reaction.

ASPIRATION HAZARD:

Not classified as a product hazardous by aspiration.

CMR EFFECTS:

Carcinogenic effects:

This preparation contains the following ingredients which can cause cancer: Chromium(VI) trioxide (cat.1).

Genotoxicity:

This preparation contains the following ingredients which can be mutagenic: Chromium(VI) trioxide (cat.2).

Toxicity for reproduction: Do not harm fertility. Do not harm the fetus developing.

Effects via lactation: Not classified as a hazardous product for children breast-fed.

DELAYED AND IMMEDIATE EFFECTS AS WELL AS CHRONIC EFFECTS FROM SHORT AND LONG-TERM EXPOSURE:

Routes of exposure: Not available.


Short-term exposure: Toxic by inhalation. May cause sensitization by inhalation. Irritating to eyes. Irritating to skin. May cause sensitization by skin contact.

Long-term or repeated exposure: Not available.

ADDITIONAL INFORMATION :

Not available.

In accordance with the requirements of the OSHA Hazard Communication Standard, 29CFR 1910.1200

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|--|------------------------------------|--|
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**SECTION 12 : ECOLOGICAL INFORMATION**

No experimental ecotoxicological data on the preparation as such is available. The ecotoxicological classification for these preparation has been carried out by using the conventional calculation method of the Directive 1999/45/EC~2006/8/EC.


|       |  |   |   |  |
|-------|--|---|---|--|
| 12. 1 | <u>TOXICITY:</u>   |   |   |  |
|       | <u>Acute toxicity in aquatic environment for individual ingredients :</u><br>Orthophosphoric acid<br>Chromium(VI) trioxide<br>Zinc oxide   | <u>CL50 (OECD 203)</u><br>mg/ l.9 6hours<br>138. Fishes<br>40. Fishes<br>1.8 Fishes | <u>CE50 (OECD 202)</u><br>mg/ l.4 8hours<br>265. Daphnia<br>0.21 Daphnia<br>1.7 Daphnia | <u>CE50 (OECD 201)</u><br>mg/ l.7 2hours<br>> 100. Algae<br>0.36 Algae<br>0.17 Algae |
|       | <u>No observed effect concentration</u><br>Not available<br><u>Low est observed effect concentration</u><br>Not available  |   |   |  |
| 12. 2 | <u>PERSISTENCE AND DEGRADABILITY:</u><br>Not available.  |   |   |  |
| 12. 3 | <u>BIOACCUMULATIVE POTENTIAL:</u><br>Not available.  |   |   |  |
| 12. 4 | <u>MOBILITY IN SOIL:</u><br>Not available.   |   |   |  |
| 12. 5 | <u>RESULTS OF PBT AND MPMB ASSESSMENT:</u> Annex XIII of Regulation (EC) no. 1907/2006:<br>Not applicable.   |   |   |  |
| 12. 6 | <u>OTHER ADVERSE EFFECTS:</u><br><u>Ozone depletion potential:</u> Not available.<br><u>Photochemical ozone creation potential:</u> Not available.<br><u>Earth global warming potential:</u> Not available.<br><u>Endocrine disrupting potential:</u> Not available. |   |   |  |

**SECTION 13 : DISPOSAL CONSIDERATIONS**






|       |   |
|-------|---|
| 13. 1 | <u>WASTE TREATMENT METHODS:</u> Directive 2008/98/EC :<br>Take all necessary measures to prevent the production of waste whenever possible. Analyse possible methods for revaluation or recycling. Do not discharge into drains or the environment, dispose of at an authorised waste collection point. Wastes should be handled and disposed of in accordance with current local and national regulations. For exposure controls and personal protection measures, see section 8.<br><br><u>Disposal of empty containers:</u> Directive 94/62/EC~2005/20/EC, Decision 2000/532/EC:<br>Emptied containers and packaging should be disposed of in accordance with currently local and national regulations. The classification of packaging as hazardous waste will depend on the degree of emptying of the same, being the holder of the residue responsible for their classification, in accordance with Chapter 15 01 of Decision 2000/532/EC, and forwarding to the appropriate final destination. With contaminated containers and packaging, adopt the same measures as for the product in itself. Emptied containers may retain product residues and vapours. Keep empty containers tightly closed. Do not refill or clean containers without proper instructions. The containers should be completely drained and stored in a safe way until they are appropriately reconditioned or disposed. Do not pressurize, cut, weld, sold, drill, grind or expose such containers to heat, flame, sparks, static electricity or other sources of ignition: They can explode and cause injury or death. Never remove labels from containers until they have been cleaned. Containers and packaging which have not been contaminated may be re-used.<br><br><u>Procedures for neutralising or destroying the product:</u><br>Authorised landfill in accordance with local regulations. |
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In accordance with the requirements of the OSHA Hazard Communication Standard, 29CFR 1910.1200

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**SECTION 14 : TRANSPORT INFORMATION**

|      |   |  |
|------|---|--|
| 14.1 | <u>UN NUMBER:</u> 3082  |  |
| 14.2 | <u>UN PROPOSED SHIPPING NAME:</u><br>ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (contains zinc oxide)  |  |
| 14.3 | <u>TRANSPORT HAZARD CLASS(ES) AND PACKING GROUP:</u>  |  |
| 14.4 | <p><u>Transport by road (ADR 2013) and Transport by rail (RID 2013):</u></p> <ul style="list-style-type: none"> <li>- Class: 9</li> <li>- Packaging group: III</li> <li>- Classification code: M6</li> <li>- Tunnel restriction code: (E)</li> <li>- Transport category: 3, max. ADR 1.1.3.6. 1000 L</li> <li>- Limited quantities: 5 L (see total exemptions ADR 3.4)</li> <li>- Transport document: Consignment paper.</li> <li>- Instructions in writing: ADR 5.4.3.4</li> </ul> <p><u>Transport by sea (IMDG 35-10):</u></p> <ul style="list-style-type: none"> <li>- Class: 9</li> <li>- Packaging group: III</li> <li>- Emergency Sheet (EmS): F-A,S-F</li> <li>- First Aid Guide (MFAG): -</li> <li>- Marine pollutant: Yes.</li> <li>- Transport document: Shipping Bill of lading.</li> </ul> <p><u>Transport by air (ICAO/IATA 2012):</u></p> <ul style="list-style-type: none"> <li>- Class: 9</li> <li>- Packaging group: III</li> <li>- Transport document: Air Bill of lading.</li> </ul> <p><u>Transport by inland waterways (ADN):</u><br/>Not available.</p> |  <br> <br> |
| 14.5 | <u>ENVIRONMENTAL HAZARDS:</u><br>Classified as hazardous for the environment.   |  |
| 14.6 | <u>SPECIAL PRECAUTIONS FOR USER :</u><br>Ensure adequate ventilation.   |  |
| 14.7 | <u>TRANSPORT IN BULK ACCORDING TO ANNEX II OF MARPOL 73/78 AND THE IBC CODE:</u><br>Not available.  |  |

**SECTION 15 : REGULATORY INFORMATION**

|      |   |  |
|------|---|--|
| 15.1 | <u>USA REGULATIONS:</u>   |  |
|      | <p><u>- Occupational Safety and Health Act (OSHA):</u><br/>This product is considered to be hazardous under the OSHA Hazard Communication Standard.</p> <p><u>- Clean Air Act:</u><br/>· 112(r) Hazardous air pollutants (HAP) (40CFR 68): No.</p> <p><u>- Clean Water Act :</u><br/>· 307 Hazardous water priority pollutants (HWPP): No.</p> <p><u>- Comprehensive Environmental Response, Compensation and Liability Act (CERCLA):</u><br/>This product contains the following Hazardous Substances for Emergency release notification (40CFR 302):<br/>Orthophosphoric acid: Reportable quantity (RQ): 5000 lbs.<br/>Releases of CERCLA hazardous substances, in quantities equal to or greater than their reportable quantity (RQ), are subject to reporting to the National Response Center under CERCLA. Such releases are also subject to state and local reporting under section 304 of Emergency Planning and Community Right-to-Know Act (EPCRA), also known as SARA Title III.</p> <p><u>- Superfund Amendments and Reauthorization Act (SARA Title III):</u><br/>· 302/304 Extremely Hazardous Substances (EHS) for Emergency release notification (40CFR 355): No.<br/>· 313 Reportable Ingredients (40CFR 372): No.<br/>· 311/312 Hazard Categories (40CFR 370): Yes.</p> <p><u>- Toxic Substance Control Act (TSCA):</u><br/>All chemical substances in this product comply with all applicable rules or order under TSCA.</p> <p><u>- California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986):</u><br/>This product contains the following chemicals known to the State of California to cause cancer:<br/>Chromium(VI) trioxide: Cancer, Development, Male, Female</p> <p><u>OTHER REGULATIONS:</u><br/>Not available</p> |  |
| 15.2 | <u>CHEMICAL SAFETY ASSESSMENT:</u><br>Not applicable (mixture).   |  |

In accordance with the requirements of the OSHA Hazard Communication Standard, 29CFR 1910.1200

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**SECTION 16 : OTHER INFORMATION****16.1** TEXT OF THE PHRASES AND NOTES REFERENCED IN SECTION 2 AN D/OR 3:R-phrases according the Directive 67/ 548/EEC-2001/59/EC (DSD), Annex III:

R9 Explosive when mixed with combustible material. R26 Very toxic by inhalation. R34 Causes burns. R35 Causes severe burns. R37 Irritating to respiratory system. R45 May cause cancer. R46 May cause heritable genetic damage. R62 Possible risk of impaired fertility. R24/ 25 Toxic in contact with skin and if swallowed. R48/23 Toxic: danger of serious damage to health by prolonged exposure through inhalation. R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. R42/43 May cause sensitization by inhalation and skin contact.

Hazard statements according the Regulation (EC) No. 1272/2008-790/2009 (CLP), Annex III:

H271 May cause fire or explosion: strong oxidiser. H301 Toxic if swallowed. H311 Toxic in contact with skin. H314 Causes severe skin burns and eye damage. H317 May cause an allergic skin reaction. H330 Fatal if inhaled. H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled. H335 May cause respiratory irritation. H400 Very toxic to aquatic life. H410 Very toxic to aquatic life with long lasting effects. H340 May cause genetic defects. H350 May cause cancer. H361f Suspected of damage fertility. H372i Causes damage to organs through prolonged or repeated exposure if inhaled.

Notes related to the identification, classification and labelling of the substances:

Nota B : Ciertas sustancias, que se presentan en el mercado a diferentes concentraciones, tienen riesgos distintos según el grado de concentración.

ADVICES ON ANY TRAINING APPROPRIATE FOR WORKERS:

It is recommended for all staff that will handle this product to carry out a basic training in occupational risk and prevention, in order to provide understanding and interpretation of material safety data sheets and labelling of products as well.

MAIN LITERATURE REFERENCES AND SOURCES FOR DATA:

- European Chemicals Agency: ECHA, <http://echa.europa.eu/>
- Access to European Union Law, <http://eur-lex.europa.eu/>
- European Chemicals Bureau: Existing Chemicals, <http://esis.jrc.ec.europa.eu/>
- Threshold Limit Values, (AGCIH, 2011).
- Cromo: Aspectos clínico-toxicológicos, F.Marques y P.Sanz (INSHT, DT .69.92, 1992).
- European agreement on the international carriage of dangerous goods by road, (ADR 2013).
- International Maritime Dangerous Goods Code IMDG including Amendment 35-10 (IMO, 2010).

ABBREVIATIONS AND ACRONYMS:

List of abbreviations and acronyms that can be used (but not necessarily used) in this material safety data sheet:

- REACH: Regulation concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals.
- DSD: Dangerous Substances Directive.
- DPD: Dangerous Preparations Directive.
- GHS: Globally Harmonized System of Classification and Labelling of Chemicals of the United Nations.
- CLP: European regulation on Classification, Labelling and Packaging of substances and chemical mixtures.
- EINECS: European Inventory of Existing Commercial Chemical Substances.
- ELINCS: European List of Notified Chemical Substances.
- CAS: Chemical Abstracts Service (Division of the American Chemical Society).
- UVCB: Substances of Unknown or Variable composition, complex reaction products or biological materials).
- SVHC: Substances of Very High Concern.
- PBT: Persistent, bioaccumulable and toxic substances.
- vPvB: Very persistent and very bioaccumulable substances.
- VOC: Volatile Organic Compounds.
- DNEL: Derived No-Effect Level (REACH).
- PNEC: Predicted No-Effect Concentration (REACH).
- LD50: Lethal dose, 50 percent.
- LC50: Lethal concentration, 50 percent.
- UN: United Nations Organisation.
- ADR: European agreement concerning the international carriage of dangerous goods by road.
- RID: Regulations concerning the international transport of dangerous goods by rail.
- IMDG: International Maritime code for Dangerous Goods.
- IATA: International Air Transport Association.
- ICAO: International Civil Aviation Organization.

MATERIAL SAFETY DATA SHEET REGULATIONS:

Material Safety Data Sheet in accordance with the requirements of the OSHA Hazard Communication Standard, 29CFR 1910.1200.

HISTORY:Revision:

Version: 16 11/04/2014

Version: 17 11/04/2014

Modifications with respect to the previous Material Safety Data Sheet:

*# The possible legislative, contextual, numerical, methodological and normative changes with respect to the previous version are highlighted in this Material Safety Data Sheet by a mark # in red and italic.*

The information of this Material Safety Data Sheet, is based on the present state of knowledge and on current UE and national laws, as the users' working conditions are beyond our knowledge and control. The product is not to be used for other purposes than those specified, without first obtaining written handling instruction. It is always the responsibility of the user to take all necessary steps in order to fulfil the demand laid down in the local rules and legislation. The information in this Material Safety Data Sheet is meant as a description of the safety requirements of the product and it is not to be considered as a guarantee of the product's properties.

**MATERIAL SAFETY DATA SHEET**

In accordance with the requirements of the OSHA Hazard Communication Standard, 29CFR 1910.1200

Revision: 11/04/2014

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