

BRUGAL GM4-RTU (65)  
Code: 41006

## 1. IDENTIFICATION OF THE PRODUCT AND COMPANY

1.1 Product description: BRUGAL GM4-RTU (65)  
Code: 41006

1.2 Intended uses: Metal passivation Only for industrial use. Forbidden to the general public.

1.3 Company: TecCoat LLC.  
PO Box 578446 Chicago, IL 60657  
Phone: (773) 758-2389 - Fax: (773) 388-0893 - e-mail: dkelly@teccoat.com

1.4 Emergency phone number: 800-424-9300 Domestic North America Chemtrec

## 2. IDENTIFICATION OF HAZARDS

2.1 EC classification:  Carc.Cat.1:R45 | Muta.Cat.2:R46 | T:R23 | Xn:R48/20 |  
Xi:R36/37/38 | R42/43 | N:R50-53

### 2.2 Adverse effects:

May cause cancer. May cause heritable genetic damage. Toxic by inhalation. Irritating to eyes. Irritating to respiratory system. Irritating to skin. May cause sensitization by inhalation. May cause sensitization by skin contact. Very toxic to aquatic organisms. May cause long-term adverse effects in the aquatic environment.

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Chemical description:  
thermoplastic acrylic resin in aqueous media.

### 3.2 Dangerous ingredients:

Substances taking part in a percentage higher than the exemption limit:

2,5 < 10 %	Phosphoric acid	EC 231-633-2	Index No. 015-011-00-6
<input type="checkbox"/> <input type="checkbox"/>	C:R34	CAS 7664-38-2	ATP12
2,5 < 10 %	Chromium(VI) trioxide	EC 215-607-8	Index No. 024-001-00-0
	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	CAS 1333-82-0	ATP29

For more information, see sections 8, 11, 12 and 16.

## 4. FIRST AID MEASURES



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.

### 4.1 By inhalation:

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.

### 4.2 By contact with the skin:

Remove 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.



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#### 4.3 By contact with eyes:

Remove contact lenses. 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. Call a physician immediately.

#### 4.4 By ingestion:

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.

### 5. FIRE-FIGHTING MEASURES

#### 5.1 Means of extinction:

In the case of fire in the surroundings, all extinguishing agents are allowed.

#### 5.2 Specific risks:

As consequence of combustion or thermal decomposition, hazardous products may be produced: carbon monoxide, carbon dioxide, nitrogen oxides, phosphorus oxides. Exposure to combustion or decomposition products may be a hazard to health.

#### 5.3 Fire-proof protective equipment:

Depending on magnitude of fire, heat-proof protective clothing may be required, appropriate independent breathing apparatus, gloves, protective glasses or face masks and boots.

#### 5.4 Other recommendations:

Cool with water the tanks, cisterns 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.

### 6. ACCIDENTAL RELEASE MEASURES

#### 6.1 Personal precautions:

Avoid direct contact with this product. For exposure controls and personal protection measures, see section 8.

#### 6.2 Environmental precautions:

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.

#### 6.3 Cleaning-up methods:

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. For subsequent waste disposal, follow the recommendations in section 13.



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## 7. HANDLING AND STORAGE

### 7.1 Handling precautions:

Comply with the health and safety at work laws.

#### - General recommendations:

Avoid any type of leakage or escape. Keep the container tightly closed.

#### - Recommendations for the prevention of fire and explosion risks:

Not applicable.

#### - Recommendations for the prevention of toxicological risks:

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.

#### - Recommendations for the prevention of environmental contamination:

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.

### 7.2 Storage conditions:

Prevent unauthorized access. Keep away from sources of heat. 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 10.1.

- Class of store : According to current legislation.
- Maximum storage period : 1. months
- Temperature interval : min: 5. °C, max: 40. °C

#### - Incompatible materials:

Keep away from reducing agents, alkalis, amines, alcohols, ketones, metals, combustible materials.

#### - Type of packaging:

According to current legislation.

#### - Limit quantity, in accordance with Directive 96/82/EC~2003/105/EC (Seveso III):

Lower threshold: 50 tons , Upper threshold: 200 tons

### 7.3 Specific uses:

For the use of this product do not exist particular recommendations apart from that already indicated.

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## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION 98/24/EC

8.1 Occupational Exposure Limits (TLV) AGCIH 2006	TLV-TWA		TLV-STEL		Year
	ppm	mg/m <sup>3</sup>	ppm	mg/m <sup>3</sup>	
Phosphoric acid		1.0		3.0	1976
Chromium(VI) trioxide		0.050		A1 As Cr	1994

TLV - Threshold Limit Value, TWA - Time Weighted Average, STEL - Short Term Exposure Limit.

A1 - Confirmed carcinogenic in humans.

- It is applicable the Directive 90/394/EEC~1999/38/EC, on the protection of the health and safety of workers from the risks related to carcinogenic or mutagenic agents at work.

### 8.2 Occupational exposure controls, Directive 89/686/EEC:

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:

##### - Mask:

Mask for gases and vapours (EN141). 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. The respiratory equipment with filters does not work satisfactorily when the air contains high concentrations of vapour.

#### - Protection of eyes and face:

Install emergency eye baths close to the working area.

##### - Goggles:

Safety goggles with suitable lateral protection (EN166).

- Face shield: No.

#### - Protection of hands and skin:

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.

##### - Gloves:

Gloves resistant against chemicals (EN374). The breakthrough time of the selected glove material should be superior to the pretended period of use. The gloves should be immediately replaced when any sign of degradation is noted.

- Boots: No.

- Apron: No.

##### - Clothing:

Suitable work clothes which avoid contact with the product should be worn. 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.

### 8.3 Environmental exposure controls:

Avoid any spillage in the environment.





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## 9. PHYSICAL AND CHEMICAL PROPERTIES

- Physical state	:	Liquid.
- Colour	:	Yellow.
- Odour	:	Characteristic.
- Boiling point	:	> 100. °C at 760 mmHg
- Flash point	:	Not flammable
- Vapour pressure	:	17.5 mmHg at 20°C
- Vapour pressure	:	12.3 kPa at 50°C
- Specific gravity	:	1.1 g/cc at 20°C
- Combustion heat	:	1073. Kcal/kg
- Solids	:	26.5 % Weight

For additional information concerning physical and chemical properties related to safety and environment, see sections 7 and 12.

## 10. STABILITY AND REACTIVITY

### 10.1 Conditions to avoid:

Stable under recommended storage and handling conditions.

- **Heat:** Keep away from sources of heat.
- **Light:** If possible, avoid direct contact with sunlight.
- **Air:** Not applicable.
- **Pressure:** Not applicable.
- **Shock:** Not applicable.

### 10.2 Materials to avoid:

Possible dangerous reaction with reducing agents, alkalis, amines, alcohols, ketones, metals, combustible materials.

### 10.3 Thermal decomposition:

As consequence of thermal decomposition, hazardous products may be produced: oxygen, phosphorus oxides.

## 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.

### 11.1 Toxicological effects:

- Irritating to skin. Skin contact can cause allergic reactions. Irritating to eyes. Some symptoms may not be immediate.
- **Carcinogen 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).

### 11.2 Dose and lethal concentrations for individual ingredients :

	DL50 Oral mg/kg	DL50 Cutaneous mg/kg	CL50 Inhalation mg/m <sup>3</sup> .4hours
Phosphoric acid	1530. Rat	2740. Rabbit	
Chromium(VI) trioxide	80. Rat	57. Rabbit	217. Rat



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## 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.

12.1 Ecotoxicity: for individual ingredients :	CL50 mg/l.96hours	CE50 mg/l.48hours	CE50 mg/l.72hours
Chromium(VI) trioxide	40. Fishes		< 0.001 Algae

### 12.2 Mobility:

Not available.

#### - Spills on the soil:

Prevent contamination of soil.

#### - Spills in water:

Very 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.

### 12.3 Persistence and degradability:

Not available.

### 12.4 Bioaccumulative potential:

Not available.

### 12.5 Results of PBT assesment:

Not available.

### 12.6 Other adverse effects:

Not available.

## 13. CONSIDERATIONS FOR DISPOSAL

### 13.1 Handling of waste, Directive 75/442/EEC~91/156/EC:

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. Waste should be handled and disposed of in accordance with current local and national regulations. For exposure controls and personal protection measures, see section 8.

### 13.2 Disposal of empty containers, Directive 94/62/EC:

Emptied containers and packaging should be disposed of in accordance with currently local and national regulations.

### 13.3 Procedures for neutralising or destroying the product:

Authorised landfill in accordance with local regulations.

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## 14. TRANSPORT INFORMATION

### CHROMIC ACID SOLUTION

14.1 Transport by road, Directive 94/55/EC (ADR 2007):  
Transport by rail, Directive 96/49/EC (RID 2007):

Class: 8      Packaging group: III      UN 1755

Transport document: Consignment paper.  
Written instructions: 80-C1-1755-EN



14.2 Transport by sea (IMDG 33-06):

Class: 8      Packaging group: III      UN 1755

Emergency Sheet (EmS): F-A,S-B  
First Aid Guide (MFAG): 700  
Marine pollutant: No.  
Transport document: Shipping Bill of lading.



14.3 Transport by air (ICAO/IATA 2007):

Class: 8      Packaging group: III      UN 1755

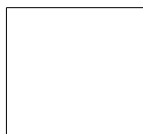
Transport document: Air Bill of lading.



## 15. INFORMATION ON REGULATIONS

15.1 EC Labelling:

T , N



This product is labelled as TOXIC and DANGEROUS FOR THE ENVIRONMENT in accordance with Directive 67/548/EEC~2004/73/EC and 1999/45/EC~2006/8/EC

R45 May cause cancer. R46 May cause heritable genetic damage. R23 Also toxic by inhalation. R36/37/38 Irritating to eyes, respiratory system and skin. R42/43 May cause sensitization by inhalation and skin contact. R48/20 Also harmful: 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. S53 Restricted to professional users: Caution -avoid exposure- Obtain special instructions before use (ex. material safety data sheet). S36/37 Wear suitable protective clothing and gloves. S45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). S51 Use only in well-ventilated areas. P94 Empty containers should be disposed of in accordance with the requirements of national regulations.

- Dangerous ingredients: Chromium(VI) trioxide

15.2 Restrictions to the marketing and use in accordance with Directive 76/769/EEC:

Restricted to professional users, in accordance with Directive 97/56/EC.

15.3 Other EC regulations:

Not applicable

15.4 Other regulations:

Not available



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## 16. OTHER INFORMATION

### Text of R-phrases listed in sections 2 and 3:

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.

### Recommended restrictions on use:

For industrial use only.

### Material Safety Data Sheet regulations:

Material Safety Data Sheet in accordance with the Annex II of the Regulation (EC) No. 1907/2006 (REACH).

### Main data sources:

- European Chemicals Bureau: Existing Chemicals, <http://ecb.jrc/existing-chemicals/>
- Threshold Limit Values, (AGCIH, 2006).
- Cromo: Aspectos clínico-toxicológicos, F.Marqués y P.Sanz (INSHT, DT.69.92, 1992).
- European agreement on the international carriage of dangerous goods by road, (ADR 2007).
- International Maritime Dangerous Goods Code IMDG including Amendment 33-06 (IMO, 2006).

### History:

Version: 1

Revision date:  
29/01/2008

Date of issue:  
26/02/2008

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.