

SAFETY DATA SHEET

Latest Revision: June 2015

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1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: BRUTUS FLUX, GEMINI FLUX BRAZING, GEMINI NEUTRAL SOLDER FLUX, GEMINI SOLDER FLUX, JUPITER CAST IRON FLUX, NEPTUNE FLUX, NEPTUNE SOLDER FLUX

MANUFACTURER: ROCKMOUNT RESEARCH & ALLOYS, INC.

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2. HAZARDS IDENTIFICATION

Emergency Overview: May be harmful if inhaled. May cause respiratory track, eye and skin irritation. May be harmful if swallowed. Aspiration hazard if swallowed. Can enter lungs and cause damage. May cause damage to the following organs: lungs, central nervous system, digestive system, respiratory track, skin, eyes, blood, kidneys, liver.

GHS Classification (Hazcom 2012):

Acute Tox. Category 4

Skin Corrosion Category 1B

Reproduction Category 1B

Ingestion, Category 4

Eye Irritation, Category 2A

Labelling:

Symbols:



Signal Word: Danger

Hazard Statements:

H301 - Toxic if swallowed.

H302 - Harmful if swallowed.

H311 - Toxic in contact with skin.

H314 - Causes severe skin burns and eye damage.

H331 - Toxic if inhaled.

H360 - May damage the fertility of the unborn child.

H412 - Harmful to aquatic life with long lasting effects.

Precautionary Statements:

P201 – Obtain special instructions before use.

P202 - Do not handle until all safety precautions have been read and understood.

P260 - Do not breathe dust, fume.

P264 – Wash skin and hair thoroughly after handling.

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

P280 – Wear protective gloves/eye protection/face protection.

P281 – Use personal protective equipment as required.

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

P301 + P330 + P331 - If swallowed: rinse mouth, DO NOT induce vomiting.

P302 + P352 – IF ON SKIN: Wash with plenty of soap and water.

P303 + P361 + P353 – If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

P304 + P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing.

P305 + P351 + P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do, continue rinsing.

P310 - Immediately call a doctor.

P330 - Rinse mouth.

P363 – Wash contaminated clothing before reuse.

P405 – Store locked up.

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

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Identity	CAS #	Range %	OSHA PEL (mg/m3)	ACGIH-TLV (mg/m3)
Boric Acid	10043-35-3	1-40	15	10
Borax	1303-96-4	1-10	10	1
Potassium Bifluoride	7789-29-9	N/A	2.5	OSHA
Potassium Tetraborate	132-77-0	N/A	5	OSHA
Zinc Chloride	7646-85-7	1-30	1	1
Amonium Chloride	12125-02-9	N/A	10	10
Hydrochloric Acid	7647-01-0	1-30	7	7.5
Methyl Alcohol	67-56-1	1-3	1	1
Isopropyl Alcohol	67-63-1	N/A	980	N/A
Glutamic Acid Hydrochloride	138-15-8	5-10	N/A	N/A
Lithium Chloride	7447-41-8	N/A	5	10
Lithium Fluoride	7789-24-4	N/A	2.5 as F	2.5 as F

Important: This section covers the materials of which the products manufactured. The fumes and gases produced during normal use of this product are covered in section 10. The term "Hazardous" in "Hazardous Material" should be interpreted as a term required and defined in OSHA Hazard Communication Standard 29CFR 1910-1200 and it does not necessarily imply the existence of hazard. The chemicals or compounds reportable by Section 313 of SARA are marked by the symbol #.

4. FIRST AID MEASURES

Inhalation: Remove to fresh air. If continued difficulty is experienced get medical attention immediately.

Skin: Flush skin with large amounts of water. If irritation develops and persists, get medical attention.

Eye: Flush eyes with water for at least 15 minutes. Get medical attention.

Ingestion: Aspiration hazard. Do not induce vomiting or give anything by mouth because this material can enter the lungs and cause severe lung damage. Get immediate medical attention.

SEE SECTION 2: HAZARD STATEMENTS AND PRECAUTIONARY STATEMENTS

5. FIRE FIGHTING MEASURES

Suitable Extinguishing Media: Film Forming Foam, Carbon Dioxide, Dry Chemical, Water Fog.

Unsuitable Extinguishing Media: None known.

Flash Point: N/A

Flammability Limits in Air by Volume: N/A

Incompatibility: N/A

Protective Equipment: Fire fighters should wear complete protective clothing including self-contained breathing apparatus.

6. ACCIDENTAL RELEASE MEASURES

Steps To Be Taken if Material Is Released Or Spilled:

Remove all sources of ignition, ventilate area. Contain spill, absorb, sweep-up. Dispose of according to local, state (provincial) and federal regulations. Do not incinerate closed containers. Contain spilled liquid with sand or earth.

7. HANDLING AND STORAGE

Precautions for Safe Handling: Wash thoroughly after handling. Wash hands before eating. Use only in a well ventilated area.

Follow all SDS/label precautions even after container is emptied because it may retain product residues.

Storage: Isolate from heat, electrical equipment, sparks and open flame. Do not store above 120 degrees F. Store large quantities in buildings designed and protected for storage that comply with OSHA 1910.106

8. EXPOSURE CONTROL/PERSONAL PROTECTION

Engineering Controls: Use a NIOSH-approved respirator to prevent overexposure, when exposure exceeds limits (Section 2). Use either an atmosphere-supplying respirator or an air-purifying respirator for organic vapors in compliance with 29 CFR 1910.134, with provisions for mist removal if conditions so indicate. All application areas should be ventilated in accordance to OSHA 29 CFR 1910.94, 1910.107, 1910.108. Remove decomposition products formed during welding or flame cutting on surface coated with this product. If baking, vent fumes.

Personal protection:

Safety eyewear including splashguards or side shields recommended. Protective outerwear. Vapor respirator, NIOSH-approved. Gloves.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Paste, Liquid, Powder

Color: Gray, White, Blue, Clear

Odour: Odourless

Odour Threshold: Not Available

pH Value: 6-10

Freezing Point: Not Available

Boiling Point/Boiling Range: 212-228 degrees F.

Flash point: Not Available

Evaporation Rate: Slower than ether

VOC Emitted (lb/gal): 4.17

Explosion limits: Not Available

Vapour pressure: Not Available

Vapour density: Heavier than air

Density at 20°C: Not Available

Specific Gravity: (water = 1.0): Not Available

Solubility: Soluble in water.

Partition coefficient: Not Available

Auto-ignition temperature: Not Available

Decomposition temperature: Not Available

Other Information: No available data.

10. STABILITY AND REACTIVITY

Chemical Stability: This product is stable under normal conditions. Avoid Incompatible products.

Hazardous Decomposition Byproducts: Thermal decomposition generates corrosive vapours.

Hazardous Polymerization: Hazardous polymerization does not occur.

Incompatible Materials: Oxidizing materials. Strong acids. Strong bases. Halogens.

Conditions to Avoid: High or low temperatures.

11. TOXICOLOGICAL INFORMATION

LD/LC50 Values that are relevant for classification		
Boric Acid 10043-35-3		
Oral	LD50, >= 2660 mg/kg (Rat)	
Inhalation	LC50, >2 mg/l/4h (Rat)	
Dermal	LD50, >= 2000 mg/kg (Rabbit)	

LD/LC50 Values that are relevant for classification		
Aromatic Hydrocarbon Solvent 64742-95-6		
Acute oral toxicity	LD50	
Acute dermal toxicity	LC50	

12. ECOLOGICAL INFORMATION**Toxicity**

Boric Acid (10043-35-3)		
LC50, fish 1	>= 1.02 g/l Carassius auratus, 3 days	
EC50 Daphnia 1	658 - 875 mg/l 48 hours	
ErC50 (algae)	<mg/l	
LOEC (chronic)	>97 mg/l salmo gairdneri	
BCF fish 1	34 mg/l Oncorhynchus tshawytscha, 90 days	

Mobility in soil: No additional information available.

Other adverse effects: No additional information available.

13. DISPOSAL CONSIDERATIONS

Dispose in a safe manner in accordance with local/national regulations. Do not dispose of waste into sewer. Avoid release to the environment.

14. TRANSPORT INFORMATION

UN NUMBER: UN1740

Proper Shipping Name: Corrosive Liquid N.O.S. (Hydrochloric Acid), Zinc Chloride). Corrosive Solid N.O.S. (Zinc Chloride, Lithium Chloride).

DOT Hazard Classification: 3,8

Packaging Group: II-Medium Danger.

15. REGULATORY INFORMATION

TSCA - The product on this SDS, or all of its components, is listed under TSCA.

CERCLA-SARA Hazard Category

This product has been reviewed according to the EPA "Hazard Categories" Promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories: IMMEDIATE HEALTH HAZARD, CHRONIC HEALTH HAZARD, FIRE HAZARD.

SARA SECTION 313:

Listed below are the substances (if any) contained in this product that are subject to the reporting requirements of Section 313 of Title III of the Superfund Amendment and Reauthorization Act of 1986 and 40 CFR part 372:

Chemical Name	CAS Number
Zinc Chloride	7646-85-7
Hydrochloric Acid	7647-01-0
Methanol	67-56-1
Ammonium Compound	N/A

16. OTHER INFORMATION

The information in this document is believed to be correct as of the date issued. However, no warranty is expressed to be implied regarding the accuracy or completeness of this information. This information and product are furnished on the condition that the person receiving them shall make his own determinations as to the suitability of the product for his particular purpose and on the condition that he assumes the risk of his use thereof.

This Safety Data Sheet complies with the EC directives 91/155/EEC and 93/112/EEC, including modifications 2001/58/EC. Complies with OSHA Communication Standard 29 CFR 1910.1200 and Superfund Amendments and Reauthorization Act (SARA) of 1986 Public Law 99-499

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