

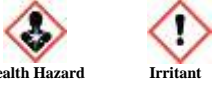
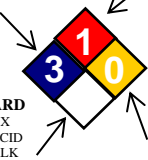








GHS SAFETY DATA SHEET

SECTION 1 - IDENTIFICATION

Manufacturer: Black Swan Mfg. Co. 4540 W. Thomas St. Chicago, IL 60651-3318 Tel.: 800-252-5796 Fax: 773-227-3705 Web Site : www.blackswanmfg.com E-mail : info@blackswanmfg.com	For any Transportation or Medical Chemical Emergencies call: <p style="text-align: center;">INFOTRAC</p> <p style="text-align: center;">(800) 535-5053 OR (352) 323-3500</p> <p style="text-align: center;">24 hours per day - 7 days a week</p>
Product Name: Tin-O-Flux	Recommended Use: To prepare copper tubing and fittings for soldering.

SECTION 2 – HAZARD(S) IDENTIFICATION

<p>Labels</p>  <p>Health Hazard Irritant</p> <p>Signal Word Warning</p> <p>HMIS</p> <table border="1" style="width: 100%;"> <tr><td style="background-color: #000080; color: white;">HEALTH</td><td style="background-color: #000080; color: white; text-align: center; width: 30px;">3</td></tr> <tr><td style="background-color: #FF0000; color: white;">FLAMMABILITY</td><td style="background-color: #FF0000; color: white; text-align: center;">1</td></tr> <tr><td style="background-color: #FFD700; color: black;">REACTIVITY</td><td style="background-color: #FFD700; color: black; text-align: center;">0</td></tr> </table>	HEALTH	3	FLAMMABILITY	1	REACTIVITY	0	<p style="text-align: center;">NFPA</p> <table border="1" style="width: 100%; text-align: center;"> <tr> <td style="width: 50%;"> HEALTH HAZARD 4 – Deadly 3 – Extreme Danger 2 – Hazardous 1 – Slight Hazardous 0 – Normal Material </td> <td style="width: 50%;"> FIRE HAZARD Flash Points 4 – Below 73°F 3 – Below 100°F 2 – Above 100°F, Not exceeding 200°F 1 – Above 200°F 0 – Will not burn </td> </tr> </table> <div style="text-align: center;">  </div> <table border="1" style="width: 100%;"> <tr> <td style="width: 50%;"> SPECIFIC HAZARD Oxidizer OX Acid ACID Alkali ALK Corrosive COR Use NO WATER  Radioactive  </td> <td style="width: 50%;"> REACTIVITY 4 – May detonate 3 – Shock and heat may detonate 2 – Violent chemical change 1 – Unstable if heated 0 – Stable </td> </tr> </table>	HEALTH HAZARD 4 – Deadly 3 – Extreme Danger 2 – Hazardous 1 – Slight Hazardous 0 – Normal Material	FIRE HAZARD Flash Points 4 – Below 73°F 3 – Below 100°F 2 – Above 100°F, Not exceeding 200°F 1 – Above 200°F 0 – Will not burn	SPECIFIC HAZARD Oxidizer OX Acid ACID Alkali ALK Corrosive COR Use NO WATER  Radioactive 	REACTIVITY 4 – May detonate 3 – Shock and heat may detonate 2 – Violent chemical change 1 – Unstable if heated 0 – Stable	<p style="text-align: center;">GHS Classification</p> <table border="1" style="width: 100%;"> <tr> <td style="width: 50%; vertical-align: top;"> <p style="text-align: center;">Health</p> Acute Toxicity: Cat. 4 Skin Irritation: Not Established Eye Irritation: Cat. 2A Skin Sensitization: NO </td> <td style="width: 50%; vertical-align: top;"> <p style="text-align: center;">Environmental</p> Acute Aquatic Toxicity: Not Established Chronic Aquatic Toxicity: Not Established </td> </tr> <tr> <td colspan="2" style="text-align: center;"> <p style="text-align: center;">Physical</p> None </td> </tr> </table>	<p style="text-align: center;">Health</p> Acute Toxicity: Cat. 4 Skin Irritation: Not Established Eye Irritation: Cat. 2A Skin Sensitization: NO	<p style="text-align: center;">Environmental</p> Acute Aquatic Toxicity: Not Established Chronic Aquatic Toxicity: Not Established	<p style="text-align: center;">Physical</p> None	
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<p style="text-align: center;">Hazardous Statements</p> <p>H302: Harmful if swallowed H315: Causes skin irritation H319: Causes serious eye irritation</p>	<p style="text-align: center;">Precautionary Statements</p> <p>P102: Keep out of reach of children P262: Do not get in eyes, on skin, or on clothing P264: Wash thoroughly after handling P281: Use personal protective equipment as required</p>															

SECTION 3 – COMPOSITION / INFORMATION ON INGREDIENTS

<u>Chemicals</u>	<u>CAS#</u>	<u>EINECS#</u>	<u>REACH</u> <u>Pre-registration Number</u>	<u>Approx %</u>
ZINC CHLORIDE	7646-85-7	231-592-0	N/A	15-25%
AMMONIUM CHLORIDE	12125-02-9	235-186-4	N/A	1-5%
TIN	7440-31-5	N/A	N/A	%
COPPER	7440-50-8	N/A	N/A	%
PETROLATUM	8009-03-8	N/A	N/A	%

*Unlisted ingredients are not classified as hazardous according to OSHA 1910.1200.

SECTION 4 – FIRST-AID MEASURES

Inhalation: Move into fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen and call physician.

Skin: Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water. If rash or burn appears consult a physician.

Eyes: Flush with water for 15 minutes. If irritation persists, get medical attention.

Ingestion: Get immediate medical attention. Rinse mouth. DO NOT INDUCE VOMITING.

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SECTION 5 – FIRE-FIGHTING MEASURES

Fire Hazard: May release ZnO and HCl fumes. Heat may build up pressure and rupture closed containers.
Combustion Products: None known.
Extinguishing Media: Carbon Dioxide, Dry Chemical, Foam or Water Fog.
Unsuitable Extinguishing Media: None.
Protective Equipment: Self-contained breathing apparatus {(SCBA), MSHA/NIOSH}. Full protective gear.
Special Fire Fighting Procedures: Evacuate enclosed areas, stay upwind. Closed or confined quarters require self-contained breathing apparatus, positive pressure hose masks or airline masks. Full protective equipment required. Toxic metal halide fumes may be produced. Use water spray to cool containers, to flush spills from sources of ignition and to disperse vapors.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Personal Precautions: Prevent contact with skin or eyes. Do not breathe fumes. Personnel cleaning up the spill should wear appropriate personal protective equipment, including respirators if vapor concentrations are high.
Protective Equipment: Wear suitable respiratory protective equipment.
Emergency Procedures: Remove all sources of ignition and ventilate area. For leaks, stop leak if it can be done safely. Evacuate area and keep unnecessary and unprotected personnel from entering the spill area.
Environmental Precautions: Avoid runoff into storm sewers, ditches and waterways.
Methods for Cleaning Up: Take up spill with sand, earth or other material and place into a clean, dry leak-proof container.

SECTION 7 – HANDLING AND STORAGE

<u>Handling</u>	<u>Storage</u>
<p>Avoid contact with eyes and skin. Avoid prolonged breathing of vapor and mist. Use with adequate ventilation. Wash thoroughly after handling. Do not eat, drink or smoke in the work area. Keep products away from heat, sparks, flames and all other sources of ignition. Keep containers closed when not in use. Empty containers may contain residues; treat as if full and observe all product precautions. Do NOT reuse empty containers.</p>	<p>Store in a cool, dry, well-ventilated area away from incompatible materials. Keep container closed when not in use. Keep away from heat, sparks, open flame and other sources of ignition. Incompatible Materials: None known.</p>

SECTION 8 – EXPOSURE CONTROLS / PERSONAL PROTECTION

<u>Hazardous Chemicals</u>	<u>ACGIH-TLV</u>	<u>ACGIH-STEL</u>	<u>OSHA-PEL</u>
ZINC CHLORIDE	1 mg/m3	N/A	1 mg/m3
AMMONIUM CHLORIDE	10 mg/m3	N/A	10 mg/m3
TIN	2 mg/m3	N/A	2 mg/m3
COPPER	1 mg/m3	N/A	1 mg/m3

Engineering Controls: A source of running water to flush or wash the eyes and skin in case of contact. Use local exhaust as needed.
Ventilation: Local ventilation adequate.
Personal Protective Equipment – Respiratory: If confined, poorly ventilated areas, use NIOSH/MSHA approved air purifying or supplied air respirators during soldering operations until fumes have dissipated.
Personal Protective Equipment – Skin: Rubber Gloves, Chemical resistant coveralls.
Personal Protective Equipment – Eyes: Safety glasses.

SECTION 9 – PHYSICAL & CHEMICAL PROPERTIES

Appearance: Pale Gray	Flash Point: Not Established	Vapor Pressure: Negligible
Odor: Low odor	Specific Gravity: 1.1 @ 20°C	Flammability: Not Established
pH: Not Established	Solubility (H2O): Negligible	Flammability Limits: LEL – Not Established
Melting Point: Not Established	Evaporation Rate: Not Established	UEL – Not Established
Freezing Point: Not Established	Vapor Density: >1 (air=1)	
Boiling Point: 638°F (337°C)	VOC: 0 g/l	

SECTION 10 – STABILITY AND REACTIVITY

Stability: Stable.
Hazardous polymerization: Will not occur.
Conditions to avoid: None known.
Incompatible materials: Strong oxidizing agents, potassium, cyanides and sulfides.
Hazardous decomposition products: None known.

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SECTION 11 – TOXICOLOGICAL INFORMATION

<u>Hazardous Chemicals</u>	<u>Toxicity</u>	
	<u>LD₅₀</u>	<u>LC₅₀</u>
ZINC CHLORIDE	Oral – 350 mg/kg (rat)	Inhalation – 1960 mg/m ³ /10M (rat)
AMMONIUM CHLORIDE	Oral – 1650 mg/kg (rat)	Inhalation – N/A
TIN	N/A	N/A
COPPER	N/A	N/A

Likely Routes of Exposure: Inhalation, Skin Contact, Eye Contact and Ingestion.
Symptoms and Effect - Inhalation: Fumes from heated product may be corrosive to mucous membranes and the respiratory system. Fumes may cause burning sensation, coughing, wheezing, shortness of breath, cyanosis, fever, chills, muscular pain, anemia, metallic taste in mouth, headache, nausea, vomiting, sweating, diarrhea and pulmonary edema. Fumes may cause stannosis, a mild benign pneumoconiosis. Repeated inhalation of fumes may cause occupational asthma. Symptoms may be delayed. **Skin Contact:** Contact may cause irritation, ulcerations, burns or dermatitis. **Eye Contact:** Vapors or fumes may cause redness, pain, blurred vision and corneal damage. Direct contact may cause burns and eye damage with possible blindness. Symptoms may be delayed. **Ingestion:** May cause irritation or burns to the mouth and throat, nausea, vomiting or diarrhea. Death may occur from strictures of the esophagus and pylorus. Symptoms may be delayed.
Long-term Effect: None known.
Pre-Existing Conditions: Persons with pre-existing skin, lung, kidney or liver disorders may be at increased risk from exposure to this product.

SECTION 12 – ECOLOGICAL INFORMATION

Ecotoxicity: Zinc Chloride- 7.2 ppm/96hrs/medium bluegrill/TLm
Ammonium Chloride – 6 ppm/96hrs/sunfish TLm
Persistence & Degradability: None known.
Bioaccumulative Potential: None known.
Mobility in soil: In normal use, emission of Volatile Organic Compounds (VOC's) to the air takes place, typically at a rate of 0 g/l.

SECTION 13 – DISPOSAL CONSIDERATION

Dispose of product or container in accordance with federal, state or local regulations.

SECTION 14 – TRANSPORTATION INFORMATION

D.O.T. (U.S.): Not Regulated.

SECTION 15 – REGULATORY INFORMATION

Precautionary Label Information: Toxic and Health Hazard.
Risk Phrases: **R22**-Harmful if swallowed. **R36/37/38:** Irritating to the eyes, respiratory system and skin. **R41**-Risk of serious damage to eyes.
Safety Phrases: **S2**-Keep out of reach of children. **S9**-Keep container in a well-ventilated place. **S16**-Keep away from sources of ignition-No smoking. **S25**-Avoid contact with eyes. **S26**-In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

SECTION 16 – OTHER INFORMATION

Information on this form is furnished solely for the purpose of compliance with the Occupational Safety and Health Act and shall not be used for any other purpose. Black Swan Mfg. Co. urges the customers receiving this Material Safety Data Sheet to study it carefully to become aware of the hazards, if any, of the product involved. In the interest of safety, you should notify your employees, agents and contractors of the information on the sheets. **DATE: 01/01/2021**