

Material Safety Data Sheet

Number: **DMN0217**

Product Name: **ZCF Soldering Flux**

Organic acid soldering flux.

Revised: 5/7/09

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Section 2 - Composition / Information on Hazardous Ingredients

<u>Ingredient</u>	<u>C.A.S. No.</u>	<u>Percent</u>	<u>Carcinogen</u>
Hydrogen Bromide	10035-10-6	15 - 30%	No
2-Hydroxyethyl Amine	141-43-5	2 - 10%	No

Section 3 - Hazards Identification

Emergency Overview: Liquid is corrosive to the eyes and skin. Excessive inhalation of soldering fumes causes irritation. Product is water based and does not burn. Product should not be allowed into storm sewers and no more than one half-gallon into sanitary sewers. Will release chlorine gas if mixed with bleach. Contact with reactive metals may form explosive hydrogen gas. A violet liquid with an acidic odor.

Health Hazards: Corrosive, Irritant, Sensitizer

Physical Hazards: Reactive

Primary Routes of Entry: Through Skin Inhalation Ingestion

Potential Health Effects:

Eyes - concentrate causes damage and may cause blindness with prolonged contact. Dilutions cause severe irritation and may cause damage with prolonged contact.

Skin - concentrate causes severe irritation and burns with prolonged contact. Dilutions cause irritation, redness at first and with continued contact possibly damage. Repeated contact may cause dermatitis.

Swallowing - concentrate causes damage to mucous membranes. Dilutions cause severe irritation or damage.

Breathing - excessive inhalation of soldering fumes causes irritation of the mouth, nose, throat and respiratory passages.

Section 4 - First Aid Measures

Eye Contact: Immediately flush eyes with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get medical attention immediately.

Skin Contact: For contact with diluted product, wash the exposed skin with soap and water. With the concentrate or when redness or irritation are present, flush the exposed skin with running water for 15 minutes. Remove contaminated clothing and shoes immediately. If redness, irritation or other symptoms exist after flushing, get medical attention immediately. Wash contaminated clothing before reuse. Discard contaminated shoes.

Inhalation: Move the affected person to fresh air. If irritation, coughing or other symptoms persist, get medical attention.

Ingestion: If the product is swallowed, do NOT induce vomiting. Vomiting will cause further damage to the throat. If the affected person is conscious, give a glass of water or milk to drink. Treat for shock by keeping the person warm and quiet. Get medical attention immediately.

Section 5 - Fire-Fighting Measures

Flash Point: None (ASTM D-56 closed cup)

Lower Explosive Limit: Not Applicable

Upper Explosive Limit: Not Applicable

Extinguishing Media: Water fog. Avoid carbonate dry powder due to reactivity.

Special Fire Fighting Procedures: None.

Unusual Fire And Explosion Hazards: Contact with reactive metals will form hydrogen gas. Hydrogen bromide fumes may be released when heated in a fire.

Section 6 - Accidental Release Measures

Steps To Be Taken If Material Is Released Or Spilled: Cover small spills with sodium carbonate (soda ash) or lime to neutralize. In some areas this may be flushed to a sanitary sewer with plenty of water. Check local regulations first. For larger spills, use adequate personal protective equipment and dike to prevent spreading. Then collect into clean pails or drums. Wash the area with an alkaline detergent or a 50% solution of soda ash.

Section 7 - Handling and Storage

Store away from alkalis, oxidizers and reactive metals in a cool, well ventilated area. Remove leaking containers. Empty containers retain product residue and may be hazardous. Observe all precautions given in this data sheet. If this product contacts bleach or a product containing bleach, it could produce a dangerous gas (chlorine).

Section 8 - Exposure Controls / Personal Protection

<u>Ingredient</u>	<u>C.A.S. No.</u>	<u>Percent</u>	<u>TWA(source)</u>	<u>STEL</u>	<u>Ceiling</u>
Hydrogen Bromide	10035-10-6	15 - 30%	3 ppm (1)	-	3 ppm (2,3,4)
2-Hydroxyethyl Amine	141-43-5	2 - 10%	3 ppm(1,2,3,4)	6 ppm(2,3,4)	-
(1)=OSHA (2)=NIOSH (3)=ACGIH (4)=CANADA TWA=8 hr Time Weighted Average STEL=15 minute TWA Ceiling=Instantaneous					

Ventilation: Use mechanical exhaust to maintain airborne concentrations below the exposure limits.

Respiratory Protection: If the exposure limit will be exceeded or fumes are irritating during use, wear a NIOSH approved respirator with a cartridge approved for zinc chloride fumes.

Protective Gloves: Use rubber or latex gloves.

Eye Protection: Wear safety glasses with side shields or chemical goggles or face shield.

Other Protective Equipment: If splashing is likely to occur wear aprons, protective clothing or boots as the situation calls for.

Section 9 - Physical and Chemical Properties

Boiling Point: 259° F.

Specific Gravity: 1.19

Percent Volatiles: 100%

Solubility In Water: Complete

Appearance and Odor: A violet liquid with an acidic odor.

Vapor Pressure: 8 mm Hg @ 68° F.

Vapor Density: 2.7 (Air = 1)

Evaporation Rate: Less than water.

pH: concentrate 1.0 ± 0.5 - 1:8 v/v dilution: 1.1 ± 0.5

Section 10 - Stability and Reactivity

Incompatibility: Alkalis, bleach, oxidizers, reactive metals.

Hazardous Decomposition Products: None

Section 11 - Toxicological Information

In laboratory rats 2-hydroxyethylamine has been suggested as a cause of kidney abnormalities.

Section 12 - Ecological Information

Do not dispose of in the environment.

Section 13 - Disposal Considerations

Waste Disposal Method: Up to one-half gallon may be washed to the sanitary sewer with a large amount of water. Larger amounts should be neutralized to within pH limits of your waste water system and then disposed of in the sanitary sewer.

Section 14 - Transport Information

D.O.T. Hazard Class: Hydrobromic Acid Solution, Not More Than 49% Hydrobromic Acid, 8, UN1788, PG II

Section 15 - Regulatory Information

The components of this product are on the TSCA inventory of chemical substances.

Section 16 - Other Information

NFPA: H:3 F:0 I:1 **HMIS® III:** H:3 F:0 P:1 These ratings estimates are to be used only with a fully implemented training program in the workplace. NFPA® is a mark registered by the NFPA. HMIS® is a mark registered by the NPCA.

Replaces sheet dated 12/5/95. Updated to ANSI Format.

The information accumulated herein is believed to be accurate but is not warranted to be. Recipients are advised to confirm in advance that the information is current, applicable, and suitable to their circumstances.