## SECTION 1 - MANUFACTURER INFORMATION

MANUF/DIST : CHEM-POWER MFG DIV/ FOSTER AND COMPANY, INC.
15 Wing Drive EMERGENCY PHONE.....: 973-267-4100
Cedar Knolls PREPARATION/REVISION DATE: 02/14/02
NJ 07927
PREPARER/CONTACT: Gary Adams, Chemist

LOCATION : Whs 1

TRADE NAME/SYNONYMS...: COPPER BASE BRAZING ALLOYS with FLUX
CHEMICAL NAME/SYNONYMS: 3/16 Yellow Flux **2.5**# PKG (#1190FC)
CHEMICAL FAMILY.....: NOT APPLICABLE
FORMULA.....: NOT APPLICABLE
PRODUCT CODE.....: 702-0006

**HAZARDOUS MATERIAL IDENTIFICATION SYSTEM (HMIS)**

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**********
*        *
*  HEALTH,..... 1
*  FLAMMABILITY.. 0
*  REACTIVITY.... 0
*  PROTECTION.... X
*        *
**********
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## SECTION 2 - HAZARDOUS INGREDIENTS

THIS PRODUCT CONTAINS HAZARDOUS INGREDIENTS : YES

| CHEMICAL/COMMON NAME | CAS-NUMBER | % | PEL-OSHA | TLV-ACGIH |
|---|---|---|---|---|
| *Copper (TLV as fume) | 7440-50-8 | N/I | N/I | .2mg/m3 |
| *Zinc | 7440-66-6 | N/I | N/I | 5mg/m3 |
| Tin | 7440-31-5 | N/I | N/I | lOmg/m3 |
| Iron | 7439-89-6 | N/I | N/I | 5mg/m3 |
| Silicon | 7440-21-3 | N/I | N/I | 10mg/m3 |
| *Manganese (TLV as fume) | 7439-96-5 | N/I | N/I | lmg/m3 |
| *Nickel | 7440-02-0 | N/I | N/I | lmg/m3 |
| Flux-Coating Boron as B203 | N/I | N/I | N/I | lOmg/m3 |

Remaining ingredients are proprietary and are classified as non-hazardous.
*this ingredient is reportable under EPA SARA Title 111-please check applicable states for additional regulations.

THIS PRODUCT CONTAINS CARCINOGENS (NTP, IARC, or 0SHA):NO

| CHEMICAL/COMMON NAME | CAS-NUMBER | % | NTP | IARC | OSHA |
|---|---|---|---|---|---|
| SEE SECTION #3 | 7440-02-0 | N/A | N/A | N/A | N/A |

## SECTION 3 - HEALTH HAZARD DATA

HEALTH EFFECTS (Acute And Chronic)-
POSSIBLE SIGNS & SYMPTOMS OF EXPOSURE TO DUST, WELDING FUME AND GASES: SHORT TERM EXPOSURE: Metallic taste; nausea; tightness of chest; fever; irritation of eyes, nose, throat and skin; loss of consciousness/death due to welding gases or lack or oxygen. LONG TERM EXPOSURE: Adverse effects may result including skin sensitization, neurological damage, and respiratory disease such as bronchial asthma, lung fibrosis or pneumonoconiosis. Chronic exposure to copper, zinc & manganese may cause metal fume fever; symptoms include fever fatigue, dryness of throat, head and body ache, and chill. Chronic exposure may affect the central nervous system leading to emotional disturbances, gait and balance difficulties and paralysis. Overexposure to to copper, zinc & manganese may cause metal fume fever; symptoms include fever copper may result in skin and hair discoloration. *USE OF THIS PRODUCT IN WELDING AND BRAZING OPERATIONS CAN RESULT IN EXPOSURE TO AIRBORN METAL PARTICULATES AND FUMES.

PRIMARY ROUTES OF ENTRY-
Primary routes of exposure are inhalation of fumes, gases, or particulates. Absorbtion through the skin is unlikely.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE-
None known.

EMERGENCY FIRST AID PROCEDURES-
INHALATION: Remove to fresh air, Seek medical help if required.
INGESTION: Unlikely. Seek medical help if large quantities are ingested.
SKIN CONTACT: Wash thoroughly with soap and water. If rash develops, call a physician.
EYE CONTACT: Flush with water for at least 15 minutes, call physician.
*Nickel & chromium must be considered possible carcinogens under OSHA(29CFR19 10.1200). The IARC has indicated that nickel & certain nickel compounds are probably carcinogenic for humans, but that the specific compounds can't be specified precisely. This conclusion was based on experience in certain nickel refining operations. Chromium has also been listed by IARC because of "sufficient evidence for the carcinogenicity of chromium & certain chromium compounds". The studies forming the basis for the conclusion were from operations different from the production or welding of nickel & chromium alloys. Recent epidemiological studies of workers melting & working alloys containing nickel/chromium have found no increased risk of cancer. Nevertheless, exposures MUST be maintained below the levels specified.

## SECTION 4 - CHEMICAL DATA

BOILING POINT (F)....: N/I
VAPOR PRESSURE (mmHg): 0
VAPOR DENSITY (AIR=1): N/I
SPECIFIC GRAVITY (WATER=1).....: **>1**
PERCENT VOLATILE BY VOLUME (%).....: 0
EVAPORATION RATE (Butyl Acetate =1): 0

SOLUBILITY IN WATER-
Insoluble

APPEARANCE AND ODOR INFORMATION-
Metal rods with powder coating

## SECTION 5 - PHYSICAL HAZARD DATA

FLASH POINT (Method Used): Nonflammabl FLAMMABLE LIMITS : Lel=N/I UEL=N/I

EXTINGUISHING MEDIA-
N/I

SPECIAL FIRE FIGHTING PROCEDURES-
N/I

UNUSUAL FIRE AND EXPLOSION HAZARDS-
Welding arc and sparks, and the use of oxy-fuel torches, can ignite combustibles and flammables.

INCOMPATIBILITY (Materials To Avoid)-
None known.

HAZARDOUS DECOMPOSITION PRODUCTS-
Chlorinated solvents may be decomposed by the arc into toxic gases such as phosgene. Welding fumes may include oxides of metals, chromates, fluorides, and complex metallics. Gases may also be hazardous. See section VIII.

WILL HAZARDOUS POLYMERIZATION OCCUR-
N/I

CONDITIONS TO AVOID FOR POLYMERIZATION-
N/I

IS THE PRODUCT STABLE-
N/I

CONDITIONS TO AVOID FOR STABILITY-
N/I

## SECTION 6 - SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED-
Product is a non-hazardous solid. No special precautions are required for spills of bulk material.

WASTE DISPOSAL METHODS-
Follow Federal, State and Local regulations regarding disposal. Scrap metal can be reclaimed for reuse.

## SECTION 7 - EXPOSURE CONTROL INFORMATION

VENTILATION-
LOCAL EXHAUST: at arc, or both MECHANICAL (General): Train welder to keep
SPECIAL.....: N/I OTHER.....: head out of fumes.

RESPIRATORY PROTECTION-
Use respirable fume respiratory or air supplied respirator when welding in a confined space or where local exhaust or ventilation does not keep exposure below the recommended exposure limit.

PROTECTIVE GLOVES-
Welder's gloves.

OTHER PROTECTIVE EQUIPMENT-
Wear helmet or use face shield with filter lens. Provide protective screens & flash goggles, if necessary, to shield others.

OTHER ENGINEERING CONTROLS-
As a rule of thumb start with a shade that is too dark to see the weld zone. Then go to the next lighter shade which gives sufficient view of the weld zone.

WORK PRACTICES-
Wear hand, head and body protection which help to prevent injury from sparks, radiation, & electrical shock. At minimum this includes welder's gloves and a protective face shield, and may include arm protectors, aprons, hats, shoulder protection, as well as dark substantial clothing. Train welder not to touch live electrical parts and to insulate himself from work and ground.
*IMPORTANT: Determine actual exposure by industrial monitoring.

HYGIENIC PRACTICES-
Wash hands thoroughly after use, especially before eating, drinking or smoking.

## SECTION 8 - SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE-
Fumes & gases from welding & high temperature cutting cannot be classified simply. The composition and quantity of both depend on the metal being welded, the process, procedures, & electrodes used. Other conditions which also influence the composition & quantity of the fumes & gases workers may be exposed: coatings on the metal being welded (paint, plating or galvanizing),the number of welders & the volume of the work area, the quality & amount of ventilation, the position of the welder's head with respect to the fume plume, as well as the presence of contaminants in the atmosphere (such as chlorinated hydrocarbon vapors from cleaning & degreasing activities).

MAINTENANCE PRECAUTIONS-
N/I

OTHER PRECAUTIONS-
The constituents of the fumes are generally different from the ingredients listed in Section 2 and may include oxides of the metals, chromates, fluorides and complex metallics. The gases may include carbon monoxide, ozone & oxides of nitrogen. IMPORTANT: Maintain exposures below the TLV. Use industrial hygiene air monitoring to ensure that your use of this material doesn't create exposures which exceed TLV. Always use exhaust ventilation. Refer to the following sources for important additional information:

ANSI 249.1 The American Welding Society
PO Box 351040
Miami, FL 33135

OSHA (29FR1910)
US Department of Labor
Washington, DC 20210

ADDITIONAL COMMENTS-
KEEP OUT OF REACH OF CHILDREN!
These products as shipped are nonhazardous, nonflammable, nonexplosive and nonreactive. Below is a list of exposure limits of components of welding fumes in mg/m3:

| | | | | | |
|---|---|---|---|---|---|
| Aluminum fume ... | 5.0 | Iron Oxide ... | 5.0 | Ozone (03) ... | 0.1 ppm |
| Carbon Monoxide . | 50 ppm | Molybdenum .. | 5.0 | Phosgene COC12. | 0.1 ppm |
| Chromium/Chromate | 0.05 | Nickel(solub1e) | 0.1 | | |
| Cobalt fume | 0.05 | Nitrogen dioxides | 3 ppm | | |
| Copper fume | 0.2 | Fluorides as F | 5.0 | | |