

MATERIAL SAFETY DATA SHEET

SECTION 1: CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: *COPPERHEAD MIG & TIG*
Product Code: 10090 10091 10190 10191 10290 10291 10492 10493 10494
 10592 10593 10594

Manufactured For: Freedom Alloys
Address: P.O. Box 1478
 Cypress, TX 77410-1478
Phone Number: (281) 807-0757
MSDS Date: Revised 3/4/2004

EMERGENCY TELEPHONE NUMBER(S):

CHEM-TEL, INC. (800) 255-3924 24-Hour Emergency Response

PRODUCT TYPE: Nickel/Copper Nickel Welding Consumable for TIG, MIG & SAW

CLASSIFICATION: AWS A5.14/A5.U: ERNi-1, ERNiCu-7, ERNiCr-3, ERNiCrFe-5, ERNiCrFe-6, ERNiCrFe-7, ERNiFiCr-1, ERNiMo-1, ERNiMo-2, ERNiMo-3, ERNiMo-7, ERNiCrMo-1, ERNiCrMo-2, ERNiCrMo-3, ERNiCrMo-4, ERNiCrMo-5, ERNiCrMo-7, ERNiCrMo-8, ERNiCuNi**, ERNiFiCr-2, ERNiCrMo-10, ERNiCrCoMo-1

SECTION 2 – HAZARDOUS INGREDIENTS/Identity Information

IMPORTANT: This section covers the materials for which the product was manufactured. The fumes and gases produced during welding with normal use of this product are covered.

*The term "Hazardous Materials" should be interpreted as a term required and defined in OSHA HAZARD COMMUNICATION STANDARD (29 CFR 1910.1200); however, the use of this term does not necessarily imply the existence of any hazard.

| Ingredients of The Product | CAS No. | Approx. % Percent | OSHA PEL Mg/M3 | ACGIH TLV Mg/M3 | Carcinogenicity |
|----------------------------|-----------|-------------------|--|---|-----------------|
| *Nickel | 7440-02-0 | 35-99 | 1 | 1 | Yes |
| Iron | 7439-89-6 | 0-20 | 5 | 10 (as Fe ₂ O ₃) | No |
| *Chromium | 7440-47-3 | 0-26 | .05 (Chromium VI) | .05 (Chromium VI) | Yes |
| Molybdenum | 7439-98-7 | 0-30 | 15 | 10 | No |
| *Manganese | 7439-96-5 | .1-4.0 | 5 | 1 | No |
| Silicon | 7440-21-3 | .1-1.25 | 5 (as SiO ₂) | 1 | No |
| Columbium | 7440-03-1 | 0-5 | 5 | 5 | No |
| Copper | 7440-50-8 | 0-30 | 0.1 | 0.2 | No |
| *Aluminum | 7429-90-5 | 0-2 | 5 (as Al ₂ O ₃) | 10 | No |
| Titanium | 7440-32-6 | 0-3.5 | 15 (as TiO ₂) | 10 (as TiO ₂) | No |
| *Vanadium | 7440-62-2 | 0-6. | 0.1 | .05 (as V ₂ O ₅) | No |
| Tungsten | 7440-33-7 | 0-4.5 | Not Registered | 1 | No |

*The ingredients marked with an asterisk are covered under the reporting requirements of Section 313 of The Emergency Planning and Community Right to Know Act of 1986 and of 40 CFR 372.

**These products contain about 70% Copper and 30% Nickel.

SECTION 3 – PHYSICAL DATA

NOT APPLICABLE

SECTION 4 – FIRE AND EXPLOSION HAZARD DATA

Welding arc and sparks can ignite combustibles and flammables. Refer to American National Standard Z49.1 for fire prevention during the use of welding and allied procedures.

SECTION 5 – HEALTH HAZARD DATA

“Electric arc-welding” may create one or more of the following health hazards: *Fumes and gases* can be dangerous to your health. Arc Rays can injure eyes and burn skin. Electric Shock can kill.

EFFECTS OF OVEREXPOSURE: “Short-term over exposure to welding fumes may result in discomfort such as: dizziness, nausea, or dryness or irritation of nose, throat, or eyes, tightness in chest, fever and allergic reactions. (see Sections 4 and 7).” “Long-term (chronic) over exposure to welding fumes may lead to siderosis (iron deposit in lungs) and is believed by some investigators to affect pulmonary function.”

EMERGENCY & FIRST AID PROCEDURES: Remove to fresh air, obtain medical attention. Employ first aid techniques recommended by the American Red Cross.

SECTION 6 – REACTIVITY DATA

STABILITY: UNSTABLE: NO
CONDITIONS TO AVOID: NONE; UNLESS OTHERWISE SPECIFIED
STABLE: YES
CONDITIONS TO AVOID: NONE; UNLESS OTHERWISE SPECIFIED
IMPATIBILITY (MATERIALS TO AVOID): NONE

HAZARDOUS DECOMPOSITION PRODUCTS: The composition and quality of welding fumes and gases are dependent upon the metal being welded, the process, procedure, and the electrodes used. Other conditions which also influence the composition and quantity of the fumes and gases to which workers may be exposed include: coatings on the material being welded (such as paint, plating, galvanizing, and phosphate coatings), the number of welders and welding operations and the volume of the work area, the quantity of welding consumables used, the design and amount of ventilation delivered, the position of the welder’s head with respect to the fume plume, and the presence of contaminants in the atmosphere (such as chlorinated hydrocarbon vapors from cleaning and degreasing activities).

When the electrode is consumed, the fume and gas decomposition products generated are different in percent and form from the ingredients listed in Section 2. Fume and gas decomposition products, and not the ingredients in the electrode, are important. The concentration of a given fume or gas component may decrease or increase by many times the original concentration in the electrode. Also, new compounds not in the electrode may form. Decomposition products of normal operation include those originating from the volatilization, reaction, or oxidation of the materials shown in Section 2, plus those from the base metal and coating, etc., as noted above.

Reasonably expected fume constituents of this product could include primarily oxides of nickel, secondarily complex oxides of iron, chromium, manganese, silicon, copper, titanium, aluminum, molybdenum and columbium. The present OSHA exposure limits for hexavalent chromium $.05\text{mg}/\text{M}^3$ and for nickel $1\text{mg}/\text{M}^3$ which will result in a significant reduction from the $5\text{mg}/\text{M}^3$ general fume level.

Gaseous reaction products may include carbon monoxide and carbon dioxide. Ozone and nitrogen oxides may be formed by the radiation from the arc. In addition to the shielding gases like argon and helium, whenever they are employed.

One recommended way to determine the composition and quantity of fumes and gases to which workers are exposed is to take an air sample from the inside the welder’s helmet if worn or in the worker’s breathing zone. See AWS F1.1 and AWS F1.2:1985, available from the American Welding Society.

SEE AWS PUBLICATION: “FUMES AND GASES IN THE WELDING ENVIRONMENT”

HAZARDOUS POLYMERIZATION: NOT APPLICABLE

SECTION 7 – SPILL OR LEAK PROCEDURES

NOT APPLICABLE

WASTE DISPOSAL METHOD: Prevent waste from contaminating surrounding environment. Discard any products residue, disposable container or liner in an environmentally acceptable manner, in full compliance with Federal, State and Local regulations.

SECTION 8 – SPECIAL PROTECTION INFORMATION (See Note)

“Read and understand the manufacturer’s instructions and the precautionary label on the product. *Ventilation* – Use enough ventilation, local exhaust at the arc, or both, to keep the fumes and gases from the worker’s breathing zone and the general area. Train the welder to keep his head out of the 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 a recommended exposure limits. *Eye Protection* – Wear helmet or use face shield with filter lens. Provide protective screens and flash goggles, if necessary, to shield others. As a rule of thumb start with a shade that is too dark to see the weld zone. The go, the next lighter shade, which gives sufficient view of the weld zone. *Protective Clothing* – Wear hand, head, and body protection that help to prevent injury from radiation, sparks, and electric shock. See ANSI Z49.1. At a 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 the welding not to touch live electrical parts and to insulate himself from work and ground. “

SECTION 8 – SPECIAL PRECAUTIONS (See Note)

OTHER PRECAUTIONS: Use exhaust system to clear welding fumes. Make sure that inhaled air does not contain fume constituents above permissible exposure levels.

NOTE: Other precautions for additional safety information on welding and cutting, see American Standard z49.1-1983, Safety in Welding and Cutting, and the Welding Handbook, Vol. 1, Chapter 9, Safe practices in Welding and Cutting, both available from American Welding Society, Inc. 550 NW LeJeune Road, P.O. Box 351040, Miami, FL 33135, Tel (305) 443-9353.
