



DO THE JOB RIGHT.

MATERIAL SAFETY DATA SHEET

BARE-WIRE FILLER METALS

19063

Soldering Wire

WELDWIRE COMPANY, INC.

Queens Drive & Henderson Road
P.O. Box 340
King of Prussia, PA
215-242-1100

Manufactured For:
The Easthill Group DbA/The Eastwood Company
263 Shoemaker Road
Pottstown, PA 19464
USA & Canada: 800-345-1178
Outside USA: 610-323-2200
Emergency contact: Chem-Trec: 800-424-9300

SECTION I - PRODUCT TYPE

This MSDS includes bare-wire filler metal welding products.

SECTION II - TRADENAME AND COMPOSITION¹**SUPER WELDWIRE DESIGNATION****STAINLESS STEEL ALLOYS²**

(X - Elements in the Product)

| | <u>Cr</u> | <u>Cu</u> | <u>Mn</u> | <u>Mo</u> | <u>Ni</u> |
|--------------|-----------|-----------|-----------|-----------|-----------|
| 308 | X | | X | | X |
| 308H | X | | X | | X |
| 308L | X | | X | | X |
| 308LSi | X | | X | | X |
| 309 | X | | X | | X |
| 309Si | X | | X | | X |
| 309L | X | | X | | X |
| 309LMo | X | | X | X | X |
| 309LSi | X | | X | | X |
| 310 | X | | X | | X |
| 310H | X | | X | | X |
| 316 | X | | X | X | X |
| 316H | X | | X | X | X |
| 316L | X | | X | X | X |
| 316LSi | X | | X | X | X |
| 317 | X | | X | X | X |
| 317L | X | | X | X | X |
| 320 | X | X | X | X | X |
| 320 (NoCb) | X | X | X | X | X |
| 320LR | X | X | X | X | X |
| 330 | X | | X | | X |
| 330-04 | X | | X | | X |
| 330HiC, 330H | X | | X | | X |
| 347 | X | | X | | X |
| 348 | X | | X | | X |
| 410Cb | X | | | | X |
| 410NiMo | X | | | | X |
| 420 | X | | | | X |
| 430 | X | | | | X |
| 502 | X | | | | X |
| 505 | X | | | X | X |
| 630 | X | X | | | X |
| 16-8-2 | X | | X | X | X |

¹Composition of HAZARDOUS INGREDIENTS (as defined by OSHA - 29CFR1910.1200) - 1% or greater by weight except 0.1% or greater for nickel and chromium²May be prefixed by EN, ER, IM, MIL or RII



DO THE JOB RIGHT.

19063

HIGH-NICKEL AND NICKEL BASE ALLOYS¹

| | Co | Cr | Cu | Mn | Mo | Ni | W |
|-------------|----|----|----|----|----|----|---|
| NiCrFe 5,62 | | X | | | | X | |
| NiCr-3, 82 | | X | | X | | X | |
| NiCrFe-6 | | X | | X | | X | |
| NiCrMo-3 | | X | | | X | X | |
| CuNi, 67 | | X | X | | | X | |
| NiCu-7, 60 | | X | X | X | | X | |
| Ni-1 | | X | X | X | | X | |

456

COBALT-BASE ALLOYS¹

| | | | | | | | |
|--------------------|---|---|---|---|---|---|---|
| Cobalt 1B, CoCr-C | X | X | X | X | X | X | X |
| Cobalt 6B, CoCr-A | X | X | X | X | X | X | X |
| Cobalt 7B | X | X | X | X | X | X | |
| Cobalt 12B, CoCr-B | X | X | X | X | X | X | X |

OTHER ALLOYS

| | | | | | | | |
|-------|--|---|--|---|---|---|--|
| 363 | | | | | | | |
| 409Cb | | X | | X | X | X | |
| 515 | | X | | X | | X | |
| 521 | | X | | | | X | |

SECTION III - HAZARDOUS INGREDIENTS¹

IMPORTANT - This section lists hazardous ingredients contained in the as shipped products.

| INGREDIENT | PEL ⁴ | TLV-TWA ⁵ | INGREDIENT | PEL ⁴ | TLV-TWA ⁵ |
|----------------|------------------|----------------------|-----------------|------------------|----------------------|
| Cobalt (Co) | 0.1 | 0.05 | Molybdenum (Mo) | 15 | 10 |
| Chromium (Cr) | 1 | 0.5 | Nickel (Ni) | 1 | 1 |
| Copper (Cu) | 1 | 1 | Tungsten (W) | None | 5 |
| Manganese (Mn) | CS | CS | | | |

(C-Ceiling Limit)

SECTION IV - PHYSICAL DATA

Bare filler metals are solid wire.

SECTION V - FIRE AND EXPLOSION DATA

Nonflammable; however, arcs and sparks can ignite flammables and combustibles.

¹Composition of HAZARDOUS INGREDIENTS (as defined by OSHA - 29CFR1910.1200) - 1% or greater by weight, except 0.1% or greater for nickel and chromium

²May be prefixed by EN, ER, IN, MIL or RN

³May be prefixed by R or MIL-R

⁴Permissible Exposure Limits (mg/m³) OSHA (29CFR1910)

⁵Threshold Limit Value - Time Weighted Average (mg/m³) = AMERICAN CONFERENCE OF GOVERNMENTAL HYGIENISTS (ACGIH)

SECTION VI - REACTIVITY DATA

Welding and hot cutting fumes and gases cannot be classified simply. Their composition and quantity are dependent on the metal being welded, the procedures, processes and the type of wire or electrodes used. Other influencing factors are the presence of contaminants in the atmosphere. Decomposition products from the welding or cutting operation include those from the volatilization reaction and/or oxidation of the materials in Section III and may include oxides of the metals, chromates and complex metallics. Gaseous reaction products may include carbon monoxide, ozone and nitrogen oxides. Chlorinated solvents may be decomposed into toxic gases such as phosgene.

When the electrodes are consumed, the fume and gas decomposition products generated are different in form from the ingredients listed in Section III. New compounds not in the electrodes may form. The known gases and fumes that may form during welding or hot cutting and their exposure limits are noted in the following table:

459

| INGREDIENT | PEL | TLV-TWA |
|---------------------------|---------|---------|
| Carbon Monoxide | 50 PPM | 50 PPM |
| Chromium | 1 | 0.5 |
| Chromium (Chromates) | 0.1 | 0.05 |
| Cobalt Fume (Co) | 0.1 | 0.05 |
| Copper Fume (Cu) | 0.1 | 0.2 |
| Iron Oxide Fume (As Fe) | 10.0 | 5.0 |
| Manganese Fume (Mn) | 5.0 | 1.0 |
| Molybdenum (Mo) (Soluble) | 5.0 | 5.0 |
| Nickel (Ni) (Soluble) | 1.0 | 0.1 |
| Nitrogen Dioxides | 5.0 PPM | 3.0 PPM |
| Ozone | 0.1 PPM | 0.1 PPM |
| Phosgene | 0.1 PPM | 0.1 PPM |

(PEL - TLV - TWA VALUES ARE mg/m³ except PPM) (C-ceiling limit) (PPM - Parts per Million)

The recommended (ACGIH) limit for welding fumes not otherwise classified is 5 mg/m³. Some elements or compounds may exceed their TLV's before the total fumes exceed 5 mg/m³.

SECTION VII - HEALTH HAZARD DATA

Electric arc welding rays can injure eyes and burn skin.

Dust, fumes and gases can be dangerous to your health.

Sections II, III AND VI list specific hazardous ingredients, reaction products and OSHA recommended PEL's and ACGIH TLV'S

Some workers may experience discomfort at concentrations below the threshold limit values and others may be affected by a pre-existing condition or other occupational illness because of the wide variation in individual susceptibilities. Fumes, gases and dust can be a health hazard thru inhalation.

Short term exposure to welding fumes, gases or dust may result in discomfort such as dizziness, nausea, fever, dryness and/or irritation of nose, throat and eyes. Skin sensitivity may also be noted.

Acute exposure can result in the same symptoms except to a greater degree as well as watery eyes, headache, breathing difficulty, frequent coughing and/or chest pains. Some toxic gases may cause pulmonary edema, asphyxiation and excessive exposure can be fatal.

Chronic exposure may result in neurological damage, lung fibrosis, pneumoconiosis and other lung diseases.

Nickel and chromium are considered possible carcinogens under OSHA (29CFR 1910.1200). The studies forming the basis for the classification were from operations other than welding of nickel and chromium. There is considerable controversy on the extent of the respiratory cancer problem due to nickel and chromium. Nevertheless, exposures must be maintained below the levels specified in Sections II, III and VI.

EMERGENCY AND FIRST AID

Remove from exposure area and call for medical aid. Administer oxygen if breathing is difficult. If not breathing, begin artificial respiration. If no detectable pulse, begin external heart massage. Employ first aid techniques recommended by the American Red Cross.

In case of electrical shock, turn off power prior to removal from exposure area and administration of first aid.

SECTION VIII - PRECAUTIONS FOR SAFE HANDLING AND USE

19063

460

VENTILATION

Use enough ventilation when cutting, grinding or welding to keep the dust, fumes and gases from the workers breathing zone and general area. Keep exposure below the limits specified in Sections III and VI.

RESPIRATORY PROTECTION

Use weld fume respirator or air supplied respirator when cutting, grinding or welding in a confined space or where local exhaust or general ventilation does not keep exposure below recommended limits.

Monitor the air quality inside the welder's helmet, if worn, and/or the worker's breathing zone to determine if a respirator is required and the type needed.

Use only NIOSH approved respirators.

EYE PROTECTION

Use OSHA approved goggles, glasses and/or face shield when cutting, grinding or welding. In addition, when hot cutting or welding, wear welding helmet or face shield with filter lens. Select welding lens shade from American Welding Society (AWS) publication F2.2.

PROTECTIVE CLOTHING

Wear gloves and flame retardant clothing when cutting, grinding or welding. Do not expose skin to radiation when hot cutting or welding. Provide protective screens to shield others.

SPILLS, LEAKS AND WASTE DISPOSAL

Clean up any grinding dust or waste residues and place in suitable Department of Transportation (DOT) approved containers and dispose of in full compliance with federal, state and local regulations. Avoid inhalation and skin exposure.

Refer to the following sources for additional important information:

ANSI Z49.1 The American Welding Society
P.O. Box 351040
Miami, FL 33135

OSHA (29CFR 1910) U.S. Department of Labor
Washington, DC 20210

DISCLAIMER OF LIABILITY

As the conditions or methods of use are beyond our control, we do not assume any responsibility and expressly disclaim any liability for any use of this material. Information contained herein is believed to be true and accurate but all statements or suggestions are made without any warranty, express or implied, regarding accuracy of the information, the hazards connected with the use of the material or the results to be obtained from use thereof.