

## SAFETY DATA SHEET

### SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

**NAME OF PRODUCT:** MG 799

**MANUFACTURER/  
SUPPLIER:** MESSER – MG WELDING PRODUCTS  
N94 W14355 GARWIN MACE DRIVE  
MENOMONEE FALLS, WI 53051 USA

**TELEPHONE NUMBER** (262) 532-4677  
**FAX NUMBER:** (262) 255-5542

**MG WELDING WEBSITE:** [www.messerwelding.com](http://www.messerwelding.com)

**PRODUCT CLASSIFICATION:** Hard-Surfacing Torch Alloy (can also be used with TIG or with arc welding techniques)

### SECTION 2: HAZARDS IDENTIFICATION

**EMERGENCY OVERVIEW:** Chemically stable and inert. Does not pose a fire hazard as shipped. **Non-Flammable:** Flames used for brazing can ignite combustibles. Refer to American National Standard Z49.1 for fire prevention during welding. These products as shipped are non-hazardous, nonflammable, non-explosive, and non-reactive. In case of fire, Use NIOSH/MSHA self contained breathing apparatus.

**ROUTES OF ENTRY:** Primary route of entry is the respiratory system. Other possible routes are eyes and/or skin contact.

**POTENTIAL HEALTH EFFECTS:**

**EYES:** Inert foreign body hazard only.

**SKIN:** Rashes/irritations due to drying of the skin and/or mechanical abrasion related to skin-to-clothing contact or skin-to-skin contact. Spatter and flames from brazing may cause burns.

**INGESTION:** Danger of serious damage to health if swallowed.

**INHALATION:** Danger of serious damage to health by prolonged exposure through inhalation.

**ACUTE HEALTH HAZARDS:** see Section 11

**CHRONIC HEALTH HAZARDS:** see Section 11

**WARNING:** This product contains or produces a chemical known to the State of California to cause birth defects (or other reproductive harm) and cancer. (California Health & Safety Code 25249.5 et seq.).

**WARNING:** avoid breathing welding fumes and gases; they may dangerous to your health. Always use adequate ventilation and use appropriate personal protection equipment.

**CARCINOGENICITY:**

**CHROMIUM** - Chromium VI is listed as being carcinogenic to humans on **IARC** and **NTP** lists, and is listed by **NIOSH** as being a potential occupational carcinogen (with no further categorization).

**NICKEL** - is listed as being carcinogenic to humans on **IARC** and **NTP** lists, and is listed by **NIOSH** as being a potential occupational carcinogen (with no further categorization).

**WELDING FUMES** (not otherwise specified) are considered to be carcinogenic defined with no further categorization by **NIOSH** and **IARC**.

Package Labeling:

Although this product does not require a hazard warning label in all countries, we recommend that the safety advice should be observed:

**Pictograms:** GHS07- GHS08



**Contains Nickel**

**R-Phrases:**

Limited evidence of carcinogenic effect

May cause sensitization by skin contact

Toxic: danger of serious damage to health by prolonged exposure through inhalation

Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment

Brazing/welding fumes and vapors may cause metal fume fever (headache, dizziness, dryness, cough, nausea, and fever) and these symptoms may appear 4-12 hours after exposure

May cause irritation by prolonged inhalation of brazing/welding fumes.

**GHS:**

Hazard categories:

Respiratory/skin sensitization: Skin Sens: 1

Carcinogenicity: Carc. 2

Specific target organ toxicity – repeated exposure: STOT RE 1

May cause an allergic skin reaction.

Suspected of causing cancer.

Causes damage to organs through prolonged or repeated exposure.

**Hazard Statements:**

H317 May cause an allergic skin reaction

H351 Suspected of causing cancer

H372 Causes damage to organs through prolonged or repeated exposure

**Precautionary Statements:**

P285 In case of inadequate ventilation wear respiratory protection

P314 Get medical advice if you do not feel well

P280 Wear protective gloves/protective clothing/eye protection/face protection

P202 Do not handle until all safety precautions have been read and understood

P260 Do not breathe dust/fume/gas/mist/vapors/spray

P501 Dispose of contents/container to waste treatment facility in accordance with local and national regulations

Before using this product, contact your doctor to determine if exposure to product or use of this product will aggravate your medical conditions.

**ADDITIONAL LABELING INFORMATION**

As an article the product does not need to be labeled in accordance with EC-directives or respective national laws.

Metals in massive form, alloys, mixtures containing polymers and mixtures containing elastomers do not require a label according to this Annex (Annex I GHS), if they do not present a hazard to human health by inhalation, ingestion or contact with skin or to the aquatic environment in the form in which they are placed on the market, although classified as hazardous in accordance with the criteria of this Annex.

Instead, the supplier shall provide the information to downstream users or distributors by means of the SDS.

**SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS**

**IMPORTANT:** This section covers the materials from which these products are manufactured. The fumes and gases produced during normal use of these products are covered in Section 8. The chemicals or compounds subject to reporting under Title III, in Section 313, of the Superfund Amendments and Reauthorization Act (SARA) are marked by the symbol #.

**Exposure Limit (mg/m<sup>3</sup>)**

<b>INGREDIENTS</b>	<b>CAS NUMBER</b>	<b>OSHA PEL</b>	<b>ACGIH-TLV</b>	<b>Percent Ingredients (by weight)</b>
Nickel #	7440-02-0	1	0.2	40 - 70
Chromium #	7440-47-3	1	0.5	10 - 30
Iron	7439-89-6	10 (as Fe)	5 (as Fe)	3 - 7
Silicon	7440-21-3	5	10	3 - 7
Boron	7440-42-8	Not listed	Not listed	1 - 5
Carbon	7440-44-0	2.5	2	0.1 - 1.0

**CAS / EINECS NUMBER / HAZARD CLASSIFICATION FOR ABOVE INGREDIENTS**

<b>INGREDIENTS</b>	<b>CAS NUMBER</b>	<b>EINECS NUMBER</b>	<b>Hazard Classification per ECD 67/548/EEC</b>
Nickel #	7440-02-0	231-111-4	Carc. Cat. 3; R40 - T; R48/23 - R43
Chromium #	7440-47-3	231-157-5	No
Iron	7439-89-6	231-096-4	No
Silicon	7440-21-3	231-130-8	No
Boron	7440-42-8	231-151-2	No
Carbon	7440-44-0	231-153-3	No

Exposure limits are subject to change. Contact ACGIH and OSHA for current values. See Section 16 for European Council Directive 67/548/EEC R-phrases and S-phrases if applicable.

**SECTION 4: FIRST AID MEASURES**

**EMERGENCY & FIRST AID PROCEDURES:** Call for medical aid and inform them of the ingredients from Section 3. Employ first aid techniques recommended by The American Red Cross.

**EYES:** Flush with a large amount of fresh water for at least 15 minutes. Get medical attention.

**SKIN:** Wash affected area with soap and water to remove dust or particles. If rash develops, see a physician. Get medical attention for irritations that persist.

**INGESTION:** Seek medical attention immediately.

**INHALATION:** Remove to fresh air. If breathing is difficult administer oxygen. If breathing has stopped, begin artificial respiration and obtain medical assistance immediately.

**GENERAL:** Move to fresh air and call for medical aid.

**SECTION 5: FIRE FIGHTING MEASURES**

**Non-Flammable** These products as shipped are non-hazardous, nonflammable, non-explosive, and non-reactive. In case of fire, use NIOSH/MSHA self contained breathing apparatus.

**NFPA HAZARD CLASSIFICATION:**

Health: 1                      Flammability: 0                      Reactivity: 0

Other: In case of fire, Use NIOSH/MSHA self contained breathing apparatus.

**HMIS HAZARD CLASSIFICATION:**

Health: 1                      Flammability: 0                      Reactivity: 0

Protection: In case of fire, Use NIOSH/MSHA self contained breathing apparatus.

**EXTINGUISHING MEDIA:** water, dry chemical extinguisher, CO<sub>2</sub> and use the extinguishing media recommended for the burning material and fire situation.

**SPECIAL FIRE FIGHTING PROCEDURES:** Low pressure extinguisher. In case of fire, Use NIOSH/MSHA self contained breathing apparatus.

**UNUSUAL FIRE AND EXPLOSION HAZARDS:** None.

**HAZARDOUS DECOMPOSITION PRODUCTS:** Thermal decomposition may produce smoke and fumes.

**SECTION 6: ACCIDENTAL RELEASE MEASURES**

**ACCIDENTAL RELEASE MEASURES:** Solid objects may be picked up and placed in a container. Wear protective clothing and make sure that the solid objects are at room temperature before handling.

**PERSONAL PRECAUTIONS:** Gloves should be worn when handling to prevent cuts.

**ENVIRONMENTAL PRECAUTIONS:** Do not flush residue into waterways.

**SECTION 7: HANDLING AND STORAGE**

**HANDLING:** Handle with care to avoid cuts and to keep the rod from piercing the skin. Wear gloves when handling welding consumables. Avoid exposure to dust and do not ingest. Some individuals can develop and allergic reaction to certain materials. Keep all warning labels and identification labels on the product.

**STORAGE:** Keep material sealed and dry before use and do not remove product identification label or warning label. After using, keep remaining product sealed and dry and do not remove product identification label or warning label.

**SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION**



**Read and understand the manufacturer's instructions and precautionary label on this product.**

**ENGINEERING CONTROLS:** Proper ventilation **must** be maintained.

**VENTILATION:** Use enough ventilation, local exhaust at the spray area, or both, to keep the fumes and gases below the TLV's in the workers breathing and the general area. Train the worker to keep his head out of the fumes. Monitor fume levels and do not exceed permissible exposure limits or values.

**RESPIRATORY PROTECTION:** Do NOT breathe fumes. Use respirable fume respirator or air supplied respirator when brazing in a confined space or where local exhaust or ventilation does not keep exposure below the TLV's.

**EYE PROTECTION:** Wear safety glasses with side shields, face shield, and/or goggles to protect against airborne dust.

**PROTECTIVE CLOTHING:** Wear gloves when using or prolonged contact with skin or repeated contact with skin is likely. Wear hand and body protection to prevent injury. See ANSI Z49.1.

**SKIN PROTECTION:** Individuals having sensitive skin may find it beneficial to use a barrier cream or moisturizer when excessive or prolonged contact with skin is likely.

**WORK HYGIENIC PRACTICES:** Professionally wash contaminated clothing before re-use. Food and drink should not be consumed or tobacco products used, nor cosmetics applied in area where metal exposures are possible.

**EXPOSURE GUIDELINES:** Use industrial hygiene monitoring equipment to ensure that exposure does not exceed applicable national exposure limits.

**OTHER PROTECTIVE EQUIPMENT:** Full protective equipment normally used in soldering / brazing operation so as to prevent any contact. Review operations to avoid contact with hazardous gas, liquid, or solid. See also:

29CFR 1910.132 - 29 CFR 1910.140 Personal Protective Equipment  
29 CFR 1910.251 - 29 CFR 1910.257 Welding, Cutting and Brazing

**EFFECTS OF OVEREXPOSURE** - brazing may create one or more of the following health hazards:

**FUMES AND GASES** can be dangerous to your health.

**PRIMARY ROUTES OF ENTRY** is the respiratory system. Other possible routes are eyes and/or skin contact.

**PREEXISTING** respiratory or allergic conditions may be aggravated in some individuals (i.e. asthma, emphysema)

Brazing fumes cannot be classified simply. The composition and quantity of both are dependent upon the metal being brazed, the process, procedure, and the rod 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 metal being brazed (such as paint, plating, or galvanizing), the volume of the work area, the quality and the amount of ventilation, position of the worker'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 and degreasing activities).

When the material is consumed, fume and gas decomposition products generated are different in percent and form from the ingredients listed in Section 3. Fume and decomposition products, not the ingredients in the rod, are important. Decomposition products include those originating from the volatilization, reaction, or oxidation of materials in Section 3, plus those from the base metal and coating, etc., as noted above. These components are virtually always present as complex oxides and not as metals (Characterization of Arc Welding Fume: American Welding Society).

Reasonably expected fume constituents of the fume could include: complex oxides of iron, chromium and nickel. The table below lists fumes that may be generated:

<u>Substance</u>	CAS	Exposure Limit (mg/m <sup>3</sup> )	
	<u>NUMBER</u>	<u>OSHA PEL</u>	<u>ACGIH-TLV</u>
Chromium (VI)	not listed	0.005	0.05 (as Cr VI)
Nickel Oxide #	1313-99-1	1 (as Ni)	0.2 (as Ni)
Iron Oxide	1309-37-1	10 (as Fe)	5 (as Fe)

Gaseous reaction products may include carbon monoxide and carbon dioxide. Ozone and nitrogen oxides may also be formed by radiation from the arc. The fume limit for Cr VI (5 micrograms/m<sup>3</sup>) may be reached before the ACGIH recommended general welding fume limit of 5 mg/m<sup>3</sup> is reached. Monitor fume levels and Cr VI level. Train workers about the hazards of Cr (VI). **Read and comply with the OSHA permissible exposure limits for hexavalent chromium (CrVI), Fed. Reg. 71 – 10099 (specifically 29 CFR 1910.1026, 29 CFR 1915.1026, and 29 CFR 1926.1126).** For CrVI, OSHA requires: “The employer shall perform initial monitoring to determine the 8-hour TWA exposure for each employee on the basis of a sufficient number of personal breathing zone air samples to accurately characterize full shift exposure on each shift, for each job classification, in each work area”. Specialized equipment is required for monitoring Cr (VI) concentration in the workplace. OSHA Analytical Method Number ID-215 for area and breathing zone sampling and OSHA Analytical Method Number W4001 for wipe samples are listed on the OSHA website - [www.osha.gov](http://www.osha.gov) -as methods for measuring Cr(VI). This standard is complex and the employer should contact an occupational health professional for doing the Cr(VI) monitoring and all other fume monitoring.

Exposure limits are subject to change. Contact ACGIH, OSHA, NIOSH, and IARC for current values.

**SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**

**Appearance:** solid rod, no odor.

**pH-Value:** n.a.

**Melting Temperature** > 1000 °F (538 °C)

**Boiling point:** n.a.

**Flash point:** n.a.

**SECTION 10: STABILITY AND REACTIVITY**

**GENERAL:** These items are only intended for brazing application.

**STABILITY:** Product is chemically stable and non-reactive.

**CONDITIONS TO AVOID:** Keep product away from heat and moisture.

**MATERIALS TO AVOID:** Non-reactive.

**HAZARDOUS POLYMERIZATION:** Will not occur.

**REACTIVITY:** None.

**HAZARDOUS DECOMPOSITION OR BY-PRODUCTS:** Fumes can be dangerous to your health. See Section 11.

In other countries the exposure limits listed in Section 3 may be different and the appropriate country standards should be used.

**SECTION 11: TOXICOLOGICAL INFORMATION**

**Threshold Limit Value:** The **ACGIH** recommended general limit for welding fume NOS (not otherwise specified) is 5 mg/m<sup>3</sup>. The **ACGIH 1999** preface states: "The **TLV-TWA** should be used as guides in the control of health hazards and should not be used as firm lines between safe and dangerous concentrations." See Section 8 for specific fume constituents that may modify the **TLV**. Brazing/welding vapours and fumes from brazing/welding may cause metal fume fever. Symptoms can appear 4 to 12 hours after. (headache, dizziness, dryness, cough, nausea and fever).

**FUMES AND GASES** can be dangerous to your health.

**PRIMARY ROUTES OF ENTRY** is the respiratory system. Other possible routes are eyes and/or skin contact.

**PREEXISTING** respiratory or allergic conditions may be aggravated in some individuals (i.e. asthma, emphysema).

**SHORT TERM (ACUTE) OVEREXPOSURE** to welding fumes may result in discomfort such as metal fume fever, dizziness, nausea, or dryness or irritation of nose, throat, or eyes. **CHROMIUM**- Inhalation of chromium can cause irritation of nasal membranes and skin. **NICKEL, NICKEL OXIDE** - May cause metallic taste, nausea, tightness in chest, fever, and allergic reactions.

**LONG TERM (CHRONIC) OVEREXPOSURE** - **PRIMARY ROUTE OF ENTRY** is the respiratory system. **NICKEL, NICKEL OXIDE** - Long term overexposure to nickel products may cause lung fibrosis or pneumoconiosis. Long term overexposure to **HEXAVALENT CHROMIUM (CrVI)** is reported to cause lung cancer in humans.

Monitor fume levels and do not exceed permissible limits.

## SECTION 12: ECOLOGICAL INFORMATION

**MATERIAL:** Welding consumables and materials can degrade into the components used to manufacture the product. Avoid exposure to conditions that could lead to accumulation in soils and groundwater.

**CONTAMINATED PACKAGING:** Empty containers should be taken for local recycling, recovery, or waste disposal. Metals may be recycled.

## SECTION 13: DISPOSAL CONSIDERATION

**WASTE DISPOSAL METHOD:** Dispose of any grinding dust and waste residues in accordance with EPA or local regulations. Plastic materials, cardboard, and rod can be re-cycled.

**U.S.A. RCRA:** Some unused product may contain chromium which is considered hazardous waste if discarded, RCRA ID characteristic Toxic Hazardous Waste D007. Other ingredients in this product may be considered "hazardous material" in other countries and they may require special disposal methods. Contact your local municipality for the proper disposal method. Residues from welding consumables and processes could degrade and accumulate in groundwater. Welding slag from these products could typically contain the following components from the coating of the rod: Ni, Fe, Mn, Si, and Cr.

## SECTION 14: TRANSPORTATION INFORMATION

**DOMESTIC TRANSPORT REGULATIONS (USA):** DOT - not regulated.

**DOMESTIC TRANSPORT REGULATIONS (CANADA):** TDG - not regulated.

**DOMESTIC TRANSPORT REGULATIONS (MEXICO):** MEX - not regulated.

### INTERNATIONAL TRANSPORT REGULATIONS:

ICAO – not regulated

IATA – not regulated

IMDG / IMO – not regulated

**OTHER AGENCIES:** No international regulations or restrictions are applicable.

Handle with care to avoid damaging the product and keep product dry. Do not remove product identification label or warning label.

## SECTION 15: REGULATORY INFORMATION

### **Read and understand the manufacturer's instructions and precautionary label on this product.**

See American National Standard Z49.1, Safety in Welding and Cutting, published by the "American Welding Society," 550 N.W. LeJeune Road, Miami, FL 33126 and OSHA Publication 2206 (29CFR 1910), U.S. Government Printing Office, Superintendent of Documents, P.O. Box 371954, Pittsburgh, PA 15250-7954 for more information. Before using this product, understand and your employer's safety practices.

**BRAZING FLAMES** and **SPARKS** can injure eyes and burn skin. Wear correct hand, eye, head, and body protection.

**U.S. FEDERAL REGULATIONS:** Under the OSHA Hazard Communication Standard these products are considered as hazardous.

**U.S. EPA TSCA (TOXIC SUBSTANCE CONTROL ACT):** All constituents of these products are on the TSCA inventory list or are excluded from listing.

**CERCLA (COMPREHENSIVE RESPONSE COMPENSATION, AND LIABILITY ACT)/SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATON ACT):**

Reportable Quantities (RQ's) and/or Threshold Planning Quantities (TPQ's):

Ingredient name:	RQ (lb)	TPQ(lb)
Product is a solid solution in the form of a solid article	-	-

Spills or releases resulting in the loss of any ingredient at or above its RQ require immediate notification to the National Response Center and to our Local Emergency Planning Committee.

**EPCRA/SARA TITLE III 313 TOXIC CHEMICALS:**

The following metallic components are listed as SARA 313 "TOXIC CHEMICALS" and are potentially subject to annual SARA 313 reporting. See Section 3 for percent and if the ingredient is present.

<u>INGREDIENT NAME</u>	<u>CAS NUMBER</u>	<u>DISCLOSURE THRESHOLD</u>
Chromium & chromium compounds	7440-47-3	1.0 % de minimis concentration
Chromium VI	Not listed	0.1 % de minimis concentration
Barium compounds	Not listed	1.0 % de minimis concentration
Cobalt	7440-48-4	0.1 % de minimis concentration
Copper	7440-50-8	1.0 % de minimis concentration
Manganese	7439-96-5	1.0 % de minimis concentration
Nickel	7440-02-0	0.1 % de minimis concentration
Aluminum (fume or dust)	7429-90-5	1.0 % de minimis concentration
Silver	7440-22-4	1.0 % de minimis concentration

Package Labeling:

Additional advice on labeling

As a finished article the product does not need to be labeled in accordance with EC-directives or respective national laws.

International rules may vary and the appropriate regulations should be followed as defined by the country where the products are used.

**SECTION 16: OTHER INFORMATION**

This Safety Data Sheet has been revised due to modifications to several paragraphs and/or new format.

**Prepared by: MG Welding Products, USA**

R-phrases

**Nickel**

R40 : Limited evidence of a carcinogenic effect.

R43 : May cause sensitization by skin contact

R48/23 : Toxic: danger of serious damage to health by prolonged exposure through inhalation.

S-phrases

**Nickel**

S2: Keep out of the reach of children

S36/37/39 : Wear suitable protective clothing, gloves and eye/face protection

S45 : In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible)

S61: Avoid release to the environment. Refer to special instructions/Safety data sheet.



**SUPPLEMENTAL INFORMATION – DEFINITIONS:**

IARC: International Agency for the Research on Cancer  
NIOSH: National Institute for Occupational Safety and Health  
OSHA: U.S. Occupational Safety and Health Administration  
ACGIH: American Conference of Governmental Industrial Hygienists  
CAS: Chemical Abstracts Service Registry Number  
EINECS: European Inventory of Existing Chemical Substances

PEL: Permissible Exposure Limit  
NTP: National Toxicology Program  
TLV: Threshold Limit Value  
ECD: European Council Directive  
GHS: Globally Harmonized System

The information in this SDS was obtained from sources we believe are reliable. However, this information is provided without any representation or warranty, expressed or implied, regarding accuracy or correctness. The conditions or methods of handling, storage, use, and disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons we do not assume responsibility and expressly disclaim liability of loss, damage, or expense arising from it or any way connected with the handling, storage, use, or disposal of the product.

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