

Material Safety Data Sheet

For Welding Consumables and Related products.

Conforms to Hazard Communication Standard 29CFR 1910.1200 Rev. October 1988

SECTION 1 – IDENTIFICATION

Manufacturer: **MAXAL Inc.**
1631 International Drive
Traverse City, MI 49686

Product Type: **Aluminum Electrodes**
Products: **Weldmark – MIG and TIG**
Alloys: **4043, 5356, 5556/5183**

Emergency Phone No: (1) 231 933 1234

SECTION II – HAZARDOUS MATERIAL

IMPORTANT:

This section covers the materials from which this product is manufactured. The fumes and gases produced during normal use are covered in section V; refer to this section for industrial hygiene purposes. The CAS Number shown represents the ingredients listed.

Ingredients	CAS No.	WT %	TLV mg/m ³	PEL mg/m ³
Aluminum Wire:		100	10*	10*
Nominal wire composition: Aluminum*****	7249-90-5	80 – 100	10**	10
Magnesium	7439-95-4	0 - 6	10*	10*
Silicon (4043 only)	7440-21-3	0 - 14	10*	10*
Manganese	7439-96-5	0 - 2	0.2 (dust & fume)	5 (fume) 1 STEL (fume)
Copper	7440-50-8	0 - .5	1 (dust) 0.2 (fume)	1 (dust) 0.1 (fume)
Chromium	7440-47-3	0 - .5	0.5 (Metal) 0.5 (Chrome II/III) 0.05 (Chrome VI*) 0.01 (Chrome VI**)	1 (metal) 0.5 (Chrome II/III) 0.005 (Chrome VI)

Supplemental Information:

(*) Not Listed. Nuisance value maximum is 10 mg/m³

(**) TLV for aluminum welding fume is 5 mg/m³

(*****) Subject to the reporting requirements of Sections 311,312 and 313 of the Emergency Planning Committee Right – to- Know Act of 1986 and of 40CFR 370 and 372.

STEL; Short Term Exposure Limit

Chrome; Cr II / III and VI Compounds; VI* Soluble compounds; VI** Insoluble Compounds

SECTION III – HAZARD DATA

Non Flammable; Welding arc and sparks can ignite combustibles and flammable products. See Z49.1 referenced in Section VI. Product is inert, no special handling or spill procedures required. Not regulated by DOT.

SECTION IV – HEALTH HAZARD DATA

Threshold Limit Value: The ACGIH recommended general limit for Welding Fume NOS – (Not Otherwise Stated) is 5 mg/m³. ACGIH – 1999 preface states that the TLV-TWA should be used as guides in the control of health hazards and should not be used as fine lines between safe and dangerous concentrations.

See Section V for specific fume constituents which may modify this TLV. Threshold Limit Values are figures published by the American Conference of Government Industrial Hygienists. Units are milligrams per cubic unit of air.

Effects of Overexposure: Electric arc welding may create one or more of the following health hazards.

- Fumes and Gases can be dangerous to your health. Common entry is by inhalation. Other possible routes are skin contact and ingestion.
- Short- term (acute) overexposure to welding fumes may result in discomfort such as metal fume fever, dizziness, nausea, or dryness or irritation of throat, nose and eyes. May aggravate pre-existing problems (e.g. asthma, emphysema).
- Long – term (chronic) overexposure to welding fumes may affect pulmonary function. Bronchitis and some lung fibrosis have been reported.
- **Warning:** This product contains or produces a chemical known to the State of California to cause cancer and birth defects (or other reproductive harm). See the (California Health and Safety Code Section 25249.5 et seq.
- Arc rays can injure eyes and burn skin. Skin cancer has been reported.
- Electric shock can kill. If welding must be performed in damp locations or with wet clothing, on metal structures or in cramped positions such as sitting, kneeling or lying, or if there is a high risk of unavoidable or accidental contact with the work-piece, use the following equipment: Semiautomatic DC Welder, DC Manual (stick) Welder, or AC Welder with Reduced Volume Control.

Emergency and First Aid Procedures: Call for medical aid. Employ first aid techniques recommended by the American Red Cross. IF BREATHING IS DIFFICULT give oxygen. IF NOT BREATHING, employ CPR (Cardiopulmonary Resuscitation) techniques. IN CASE OF ELECTRICAL SHOCK, turn off power and follow recommended treatment. In all cases call a physician

SECTION V – REACTIVITY DATA

Hazardous Decomposition Products: Welding fumes and gases cannot be classified simply. The composition and quantity of both are dependent upon the material being welded, the process procedure and the electrodes used.

- Other conditions which also influence the composition and the quantity of the fumes and gases to which the workers may be exposed include: coatings on the metal being welded (such as paint, plating or galvanizing), the number of welders and the volume of the worker area, the quantity and amount of ventilation, the position of the welders head in relation 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 electrode is consumed, the fume and gas decomposition products generated are different in percent and form from the ingredients listed previously

in Section II. Decomposition products of normal operation include those originating from the volatilization, reaction, or oxidation of the materials shown in Section II, plus those from the base material and coating, etc., as noted above.

- Reasonably expected fume constituents of this product would include: primarily aluminum oxide; secondarily magnesium oxide (for 5356) and complex oxides of silicon (for 4043).
- Maximum fume exposure guideline and PEL for this product is 5 mg/m³.

Gaseous reaction products may include carbon monoxide and carbon dioxide. Ozone and nitrogen oxides may be formed by radiation from the arc.

Determine the composition and quantity of the fumes and gases to which the workers are exposed by taking air samples from inside the welders helmet (if worn) or around the welders breathing zone. Improve ventilation if the exposures are above the allowable limits. See ANSI/AWS F1.1, F1.2, F1.3 and F1.5, all of which are available from the American Welding Society, 550 NW LeJeune Road, Miami, FL 33126 or www.aws.org.

SECTION VI and VII

CONTROL MEASURES FOR SAFE HANDLING AND USE

Read and understand the manufacturer's instruction and the precautionary label on the products. See the ANSI Z49.1 "Safety in Welding, Cutting and Allied Processes" published by the American Welding Society and OSHA Publication 2206 (29CFR1910), U.S. Government Printing Office, Superintendent of Records, PO Box 371954, Pittsburgh, PA 15250 – 7954 for more details on any of the following:

- **Ventilation;** use sufficient ventilation, local exhaust at the arc, or both to keep the fumes and gases from the welders' immediate breathing zone and general work area. Instruct the welders to keep their heads out of the fumes. Try to keep exposure as low as possible.
- **Respiratory Protection;** use ventilating type fume respirator or air supplied respirator when welding in a confined spaced or general work zone when local exhaust or ventilation does not keep the exposure below the TLV.
- **Eye Protection;** wear a helmet or use a face shield with a filter lens shade No.12 or greater. Shield other by proving screens and anti-flash goggles.
- **Protective Clothing;** wear head, hand and body protection to prevent injury from radiation, sparks and electric shock. See ANSI Z49.1. At a minimum this includes welder's gloves, a protective face shield and could also include arm protectors, aprons, hats, shoulder protection as well as (dark) substantial clothing. Instruct the welders not to allow electrically live parts or electrodes to contact their skin, also clothing or gloves if they are wet. Insulate from work-piece and ground.
- **Disposal Information;** discard any product, residue, disposable container, or liner as ordinary waste in an environmentally acceptable manner according to Federal State and Local Regulations unless otherwise stated. No applicable ecological information available.