



SAFETY DATA SHEET

This Safety Data Sheet complies with Annex II of 830/2015 amending EC No. 1907/2006, CLP directive 1272/2008, also in accordance with ISO 11014-1 and ANSI Z400.1

Issued: 2019-11-01

AMS4191 ALUMINUM WELDING WIRE

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Trade name AMS4191 Aluminum Welding Wire

1.2. Relevant identified uses of the substance or mixture and uses advised against

Product type This product is a continuous solid metal wire.

Use Arc Welding

1.3. Details of the supplier of the safety data sheet

Supplier Aimtek, Inc.

Street address 201 Washington Street
Auburn, MA 01501
USA

Telephone 508-832-5035

Email sales@aimtek.com

Web site www.aimtek.com

1.4. Emergency telephone number

Emergency phone number Aimtek 508-832-5035 / Chemtrec 1-800-424-9300

Available outside office hours No

Other

Not applicable

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Description In the form these substances are present in this product they do not contribute to a hazard classification of the product. The product is not classified

2.2. Label elements

The product does not require labelling in accordance with CLP Regulation (EC) No 1272/2008.



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2.3. Other hazards

Other hazards

When this product is used in a welding process, the most important hazards are welding fumes, heat, radiation and electric shock. Avoid exposure to brazing and welding fumes, radiation, spatter, electric shock, heated materials and dust. Overexposure to cutting, scarfing and welding fumes may result in symptoms like metal fume fever, dizziness, nausea, dryness or irritation of the nose, throat or eyes. Overexposure to cutting, scarfing and welding fumes may affect pulmonary function. Persons with a pacemaker should not go near welding or cutting operations until they have consulted their doctor and obtained information from the manufacturer of the device. When this product is used in a welding process, the most important hazards are welding fumes, heat, radiation and electric shock.

Fumes: Overexposure to welding fumes may result in symptoms like metal fume fever, dizziness, nausea, dryness or irritation of the nose, throat or eyes. Chronic overexposure to welding fumes may affect pulmonary function. Overexposure to manganese and manganese compounds above safe exposure limits can cause irreversible damage to the central nervous system, including the brain, symptoms of which may include slurred speech, lethargy, tremor, muscular weakness, psychological disturbances and spastic gait.

Heat: Spatter and melting metal can cause burn injuries and start fires.

Radiation: Arc rays can severely damage eyes or skin.

Electricity: ELECTRIC SHOCK can kill.

Other

Not applicable

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SECTION 3: Composition/information on ingredients

3.2. Mixtures

Chemical name	CAS No. EC No. REACH No. Index No.	Concentration	Classification	H-phrase M factor acute M factor chronic	Note
Aluminum	7429-90-5 231-072-3 - -	99 - 100%	-	- - -	-
COPPER	7440-50-8 231-159-6 - -	5.8 - 6.8%	-	- - -	-
MANGANESE	7439-96-5 231-105-1 - -	0.2 - 0.4%	-	- - -	-
IRON	7439-89-6 231-096-4 - -	0 - 0.3%	-	- - -	-
Titanium	7440-32-6 231-142-3 - -	0.1 - 0.2%	-	- - -	-
Silicon	7440-21-3 231-130-8 - -	0 - 0.2%	-	- - -	-
Zinc	7440-66-6 231-175-3 - -	0 - 0.1%	-	- - -	-
magnesium powder (pyrophoric)	7439-95-4 231-104-6 - -	0 - 0.02%	Pyr. Sol. 1, Water react. 1	H250, H260 - -	-

Product based on This product is a continuous solid metal wire.



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SECTION 4: First aid measures

4.1. Description of first aid measures

Description of first aid measures	No first aid measures should be required for this product as shipped. Electric shock: Disconnect and turn off the power. Use a nonconductive material to pull victim away from contact with live parts or wires. If not breathing, begin artificial respiration, preferably mouth-to-mouth. If no detectable pulse, begin Cardio Pulmonary Resuscitation (CPR). call emergency physician to the scene of the accident.
Inhalation	If breathing has stopped, perform artificial respiration and obtain medical assistance immediately! If breathing is difficult, provide fresh air and call physician.
Skin contact	For skin burns from arc radiation, promptly flush with cold water. Get medical attention for burns or irritations that persist. To remove dust or particles wash with mild soap and water
Eye contact	For radiation burns due to arc flash, see physician. To remove dusts or fumes flush with water for at least fifteen minutes. If irritation persists, obtain medical assistance.
Ingestion	According to experience not expected.

4.2. Most important symptoms and effects, both acute and delayed

Not applicable

4.3. Indication of any immediate medical attention and special treatment needed

Not applicable

Other

Not applicable

SECTION 5: Firefighting measures

5.1. Extinguishing media

Not applicable

5.2. Special hazards arising from the substance or mixture

Special hazards arising from the substance or mixture	No specific recommendations for welding consumables. Welding arcs and sparks can ignite combustible and flammable materials. Use the extinguishing media recommended for the burning materials and fire situation.
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5.3. Advice for firefighters

Special protective equipment for fire-fighters	Wear self-contained breathing apparatus as fumes or vapors may be harmful.
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Other

Not applicable



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SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions, protective equipment and emergency procedures

Wear hand, head, eyes, ear and body protection like welders gloves, helmet or face shield with filter lens, safety boots, apron, arm and shoulder protection. Keep protective clothing clean and dry.

6.2. Environmental precautions

Environmental precautions

Refer to Section 13.

6.3. Methods and material for containment and cleaning up

Methods and material for containment and cleaning up

Solid objects may be picked up and placed into a container. Liquids or pastes should be scooped up and placed into a container. Wear proper protective equipment while handling these materials. Do not discard as refuse.

6.4. Reference to other sections

Reference to other sections

Refer to Section 8 and Section 13.

Other

Not applicable

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Preventive handling precautions

Handle with care to avoid stings and cuts. Wear gloves when handling welding consumables. Avoid exposure to dust. Do not ingest. Some individuals can develop an allergic reaction to certain materials. Retain all warning and identity labels.

7.2. Conditions for safe storage, including any incompatibilities

Conditions for safe storage, including any incompatibilities

Keep separate from chemical substances like acids and strong bases, which could cause chemical reactions.

7.3. Specific end use(s)

Specific end use(s)

Arc Welding

Other

Not applicable

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SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure limits

Use industrial hygiene monitoring equipment to ensure that exposure does not exceed applicable national exposure limits. The following limits can be used as guidance. Unless noted, all values are for 8 hour time weighted averages (TWA).

National occupational exposure limits

Ingredient	CAS No. EC No.	Exposure limit ppm / mg/m ³	Short-term exposure limit ppm / mg/m ³	Ceiling exposure limit ppm / mg/m ³	Source	Remark	Year
zinc	7440-66-6 231-175-3	- -	- -	- -	OSHA	No PEL	2017
Manganese	7439-96-5 231-105-1	- -	- -	5 -	OSHA	-	2017
Aluminum	7429-90-5 231-072-3	- 15	- -	- -	OSHA	Total dust	2017
Aluminum	7429-90-5 231-072-3	- 5	- -	- -	OSHA	Respirable fraction	2017
Iron	7439-89-6 231-096-4	- -	- -	- -	OSHA	NO PEL	2017
Silicon	7440-21-3 231-130-8	- 15	- -	- -	OSHA	Total dust	2017
Silicon	7440-21-3 231-130-8	- 5	- -	- -	OSHA	Respirable Fraction	2017
Copper	7440-50-8 231-159-6	- 0.1	- -	- -	OSHA	as Cu (Fume)	2017
Copper	7440-50-8 231-159-6	- 1	- -	- -	OSHA	as Cu (dust,mist)	2017
magnesium powder (pyrophoric)	7439-95-4 231-104-6	- -	- -	- -	OSHA	NO PEL	2017
Titanium	7440-32-6 231-142-3	- -	- -	- -	OSHA	NO PEL	2017

8.2. Exposure controls

Not applicable

Other

Other

Avoid exposure to brazing and welding fumes, radiation, spatter, electric shock, heated materials and dust. Train welders to avoid contact with live electrical parts and insulate conductive parts.

Ventilation

Use respirator or air supplied respirator when welding or brazing in a confined space, or where local exhaust or ventilation is not sufficient to keep exposure values within safe limits. Use special care when welding painted or coated steels since hazardous substances from the coating may be emitted. Ensure sufficient ventilation, local exhaust, or both, to keep welding fumes and gases from breathing zone and general area.



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SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance, physical state	Not applicable
Appearance, colour	Silver grey
Odour	None
Odour treshold	Not applicable
pH value	Not applicable
Melting point / freezing point	970 - 1515 °F
Initial boiling point and boiling range	Not applicable
Flash point	Not applicable
Evaporation rate	Not applicable
Flammability (solid, gas)	Not applicable
Upper / lower flammability or explosive limits	Not applicable
Vapour pressure	Not applicable
Vapour density	Not applicable
Relative density	0.1 lb/in ³
Solubility	Not applicable
Water solubility	None
Partition coefficient: n-octanol / water	Not applicable
Auto-ignition temperature	Not applicable
Decomposition temperature	Not applicable
Viscosity, kinematic	Not applicable
Viscosity, dynamic	Not applicable
Explosive properties	Not applicable
Oxidising properties	Not applicable

9.2. Other information

Not applicable



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Other

Not applicable

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity The product is non-reactive under normal conditions of use, storage, and transport.

10.2. Chemical stability

Chemical stability Stable at normal conditions

10.3. Possibility of hazardous reactions

Not applicable

10.4. Conditions to avoid

Conditions to avoid Incompatible with strong acids and oxidizing agents. This product is only intended for normal welding purposes.

10.5. Incompatible materials

Incompatible materials Incompatible with strong acids and oxidizing agents.

10.6. Hazardous decomposition products

Hazardous decomposition products When this product is used in a welding process, hazardous decomposition products would include those from the volatilization, reaction or oxidation of the materials listed in Section 3 and those from the base metal and coating. The amount of fumes generated from this product varies with welding parameters and dimensions.

Other

Other Refer to applicable national exposure limits for fume compounds, including those exposure limits for fume compounds found in Section 8. Manganese has a low exposure limit, in some countries, that may be easily exceeded. Reasonably expected gaseous products would include carbon oxides, nitrogen oxides and ozone. Air contaminants around the welding area can be affected by the welding process and influence the composition and quantity of fumes and gases produced.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Information on toxicological effects Inhalation of welding fumes and gases can be dangerous to your health. Classification of welding fumes is difficult because of varying base materials, coatings, air contamination and processes. The International Agency for Research on Cancer has classified welding fumes as possibly carcinogenic to humans (Group 2B).

Acute toxicity Overexposure to welding fumes may result in symptoms like metal fume fever, dizziness, nausea, dryness or irritation of the nose, throat or eyes.

Skin corrosion/irritation No data available



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Serious eye damage/irritation	No data available
Respiratory/skin sensitization	No data available
Germ cell mutagenicity	No data available
Genotoxicity	No data available
Carcinogenicity	No data available
Repeated dose toxicity	No data available
Reproductive toxicity	No data available
STOT-single exposure	No data available
STOT-repeated exposure	No data available
Aspiration hazard	No data available
LD50 Oral	No data available
LD50 Dermal	No data available
LC50 Inhalation	No data available
<i>Other</i>	
Acute effects	No data available
Long term effect	Chronic toxicity: Overexposure to welding fumes may affect pulmonary function. Overexposure to manganese and manganese compounds above safe exposure limits can cause irreversible damage to the central nervous system, including the brain, symptoms of which may include slurred speech, lethargy, tremor, muscular weakness, psychological disturbances and spastic gait

SECTION 12: Ecological information

12.1. Toxicity

Acute toxicity	No data available
Toxicity	No data available
Aquatic	No data available
Soil	No data available
Acute fish toxicity	No data available
Acute algae toxicity	No data available
Acute crustacean toxicity	No data available
Chronical toxicity	No data available

12.2. Persistence and degradability

Persistence and degradability	No data available
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Decay/transformation No data available

12.3. Bioaccumulative potential

Bioaccumulative potential No data available

12.4. Mobility in soil

Mobility No data available

12.5. Results of PBT and vPvB assessment

Results of PBT and vPvB assessment No data available

12.6. Other adverse effects

Other adverse effects No data available

Other

Other Welding consumables and materials could degrade/weather into components originating from the consumables or from the materials used in the welding process. Avoid exposure to conditions that could lead to accumulation in soils or groundwater.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Disposal considerations USA RCRA: This product is not considered hazardous waste if discarded. Discard any product, residue, disposable container or liner in an environmentally acceptable manner, in full compliance with federal and local regulations. Use recycling procedures if available. Residues from welding consumables and processes could degrade and accumulate in soils and groundwater.

Other

Not applicable

SECTION 14: Transport information

14.1. UN number

Not applicable

14.2. UN proper shipping name

Not applicable

14.3. Transport hazard class(es)

Not applicable

14.4. Packing group

Not applicable



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14.5. Environmental hazards

Not applicable

14.6. Special precautions for user

Not applicable

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable

Other

Not applicable

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

EU regulations

Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC.

Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006

Commission Regulation (EU) 2015/830 of 28 May 2015 amending Regulation (EC) No 1907/2006 of the European Parliament and the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)

DIRECTIVE 2008/98/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL. of 19 November 2008. on waste and repealing certain Directives.

European Parliament and Council Directive 94/62/EC of 20 December 1994 on packaging and packaging waste.

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Other regulations, limitations and legal regulations

Poland Regulations:

ACT of 25 February 2011 on the chemical substances and their mixtures(OJ # 63, poz. 322).

Regulation of the Minister of Labour and Social Policy of 6 June 2014 on Maximum Permissible Concentration and Intensity of Agents Harmful to Health in the Working Environment (Dz. u. z. 2014, poz 817).
The Act on Waste of 14 December 2012, Journal of Laws of 2013, item 21 with amendments

Act of 13th June 2013 on packaging management and packaging waste (Journal of Laws of 2013, item 888).

Regulation of the Minister of the Environment of 9 December 2014 on waste catalogue (Journal of Laws of 2014, item 1923).

Regulation of the Minister of Economy of 21 December 2005. Concerning essential requirements for personal protective equipment (Journal. Laws No. 259, item. 2173).

Regulation of the Minister of Health of 2 February 2011 on tests and measurements of factors harmful to health in the working environment (the Journal of Laws 2011, no. 33, item 166).

USA Regulations :

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

CERCLA/SARA Title III Reportable Quantities (RQs) and/or Threshold Planning Quantities (TPQs):
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 your Local Emergency Planning Committee.

EPCRA/SARA Title III 313 Toxic Chemicals: The following metallic components are listed as SARA 313 "Toxic Chemicals" and potential subject to annual SARA 313 reporting. See Section 3 for weight percent.
Manganese: 1.0% de minimis concentration
Aluminium: 1.0% de minimis concentration
Copper: 1.0% de minimis concentration
Zinc: 1.0% de minimis concentration

International Inventories:

Australia: The substance(s) in this product is/are in compliance with the inventory requirements of Australian Inventory of Chemical Substances (AICS)

United States EPA Toxic Substance Control Act: All constituents of this product are on the TSCA inventory list or are excluded from listing.

Canadian Environmental Protection Act (CEPA): All constituent(s) of this product is/are on the Domestic Substance List (DSL).

15.2. Chemical safety assessment

Chemical safety assessment Not Available



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Other

Other

Read and understand the manufacturer's instructions, your employer's safety practices and the health and safety instructions on the label. Observe any federal and local regulations. Take precautions when welding and protect yourself and others.

WARNING: Welding fumes and gases are hazardous to your health and may damage lungs and other organs. Use adequate ventilation. ELECTRIC SHOCK can kill. ARC RAYS and SPARKS can injure eyes and burn skin.

SECTION 16: Other information

Changes to previous revision

This Safety Data Sheet has been revised due to modifications to Sections 1-16.

References to key literature and data sources

USA: Contact Aimtek if you have any questions about this SDS.

Aimtek, Inc.	Telephone	508-832-5035
201 Washington Street	Email	sales@aimtek.com
Auburn, MA 01501	Web site	www.aimtek.com
USA		

USA: American National Standard Z49.1 "Safety in Welding and Cutting", ANSI/AWS F1.5 "Methods for Sampling and Analyzing Gases from Welding and Allied Processes", ANSI/AWS F1.1 "Method for Sampling Airborne Particles Generated by Welding and Allied Processes", AWSF3.2M/F3.2 "Ventilation Guide for Weld Fume", American Welding Society, 550 North Le Jeune Road, Miami Florida 33135. Safety and Health Fact Sheets available from AWS at www.aws.org.

USA: OSHA Publication 2206 (29 C.F.R. 1910), U.S. Government Printing Office, Superintendent of Documents, P.O. Box 371954, Pittsburgh, PA 15250-7954

USA: American Conference of Governmental Hygienists (ACGIH), Threshold Limit Values and Biological Exposure Indices, 6500 Glenway Ave., Cincinnati, Ohio 45211, USA.

USA: NFPA 51B "Standard for Fire Prevention During Welding, Cutting, and Other Hot Work" published by the National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169.

UK: WMA Publication 236 and 237, "Hazards from Welding Fume", "The arc welder at work, some general aspects of health and safety".

Germany: Accident prevention regulation BGV D1, "Welding, cutting and related procedures".

Canada: Canada: CSA Standard CAN/CSA-W117.2-01 "Safety in Welding, Cutting, and Allied Processes".

This product has been classified according to the hazard criteria of the CPR and the SDS contains all the information required by the CPR.

Phrase meaning



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Other

Additional information

Aimtek requests the users of this product to study this Safety Data Sheet (SDS) and become aware of product hazards and safety information. To promote safe use of this product a user should:

- notify its employees, agents and contractors of the information on this SDS and any product hazards/safety information.
- furnish this same information to each of its customers for this product.
- request such customers to notify employees and customers for the same product hazards and safety information.

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