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Revision Number 2

1. IDENTIFICATION

Product identification

Product identifier	Certanium® AWS ER4043 Aluminum MIG Welding Wire
Other means of identification	41736
Recommended use	Brazing Alloy, Welding Alloy
Restrictions on use	For industrial use only, These items are only intended for normal welding purposes

Supplier

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2. HAZARD(S) IDENTIFICATION

Hazard Classification

Solid metallic products are generally classified as 'articles' and do not constitute a hazardous material in solid form under the definitions of the OSHA Hazard Communication Standard (29 CFR 1910.1200). Any articles manufactured from these solid products would be generally classified as non-hazardous. Some hazardous elements contained in these products can be emitted under certain processing conditions such as but not limited to : burning, melting, cutting, sawing, brazing, grinding, machining, milling, and welding. Products in the solid state present no fire or explosion hazard. Small chips, fines, and dust may ignite readily, though. The following classification information is for the hazardous elements which may be released during processing.

Flammable solids

Category 2

Symbol



Signal word

WARNING

Hazard statements

H228 - Flammable solid

Precautionary statements

General	P101 - If medical advice is needed, have product container or label at hand P102 - Keep out of reach of children P103 - Read label before use.
Prevention	P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P241 - Use explosion-proof electrical/ ventilating/ lighting/ equipment P280 - Wear protective gloves and eye/face protection
Response	Not applicable
Fire	P370 + P378 - IN CASE OF FIRE: Use CO2, dry chemical, or foam to extinguish
Storage	Not applicable
Disposal	Not applicable
Hazard(s) Not Otherwise Classified (HNOC)	None known.
Physical Hazards Not Otherwise Classified (PHNOC)	None known.
Unknown acute toxicity	None known.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Composition	This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200).
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Chemical name	CAS-No	Weight %
Aluminum	7429-90-5	80-95
Silicon	7440-21-3	5-15

4. FIRST-AID MEASURES

Necessary first-aid measures

Inhalation	Remove to fresh air immediately or administer oxygen. Get medical attention immediately.
Ingestion	Seek medical attention immediately.
Skin contact	Flush area with large quantities of water. Seek medical attention if irritation persists. Seek medical attention if irritation occurs.
Eye contact	Flush with plenty of water for at least 15 minutes. Get medical attention.
Most important symptoms (acute)	Electric shock can kill. For electric shock, disconnect and turn off the power. Use a nonconductive material to pull victim away from contact with live wire parts or wires. Immediately contact a physician.
Most important symptoms (over-exposure)	Eye irritation. Inhaling this product can result in respiratory tract irritation, leading to mild to severe irritation of the nose, throat, and lungs. Some toxic gases associated with welding may cause pulmonary edema, asphyxiation, and death. Acute overexposure may include

signs and symptoms such as watery eyes, nose and throat irritation, headache, dizziness, difficulty in breathing, frequent coughing or chest pains. Excessive inhalation of fumes may cause 'Metal Fume Fever' with flu-like symptoms such as chills, fever, body aches, vomiting, sweating, etc.

Indication of any immediate medical attention and special treatment needed

Not applicable.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media

Alcohol resistant foam. Water spray. Dry chemical. Carbon dioxide (CO₂). Welding arcs and sparks can ignite combustible and flammable materials.

Unsuitable extinguishing media

Do not use water on molten metal. Large fires may be flooded with water from a safe distance.

Specific hazards

Welding arcs and sparks can ignite combustible and flammable materials. Hazardous Thermal Decomposition Products: Aluminum oxide. silicon oxides.

Special protective equipment for fire-fighters

Fire fighters should wear complete protective clothing including self-contained breathing apparatus.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Use personal protection recommended in Section 8. For waste disposal, see section 13 of the SDS.

Methods and materials for containment and cleaning up

Solid objects may be picked up and placed in a container. Make sure the solid objects are at room temperature before handling. 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.

7. HANDLING AND STORAGE

Precautions for safe handling

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

Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a dry and well-ventilated place. Keep separate from chemical substances like acids and strong bases, which could cause chemical reactions. Ground/bond container and receiving equipment.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Chemical name	OSHA PEL (TWA)	ACGIH OEL (TWA)	NIOSH - TWA
Aluminum	15 mg/m ³ TWA 5 mg/m ³ TWA	1 mg/m ³ TWA	10 mg/m ³ TWA 5 mg/m ³ TWA 5 mg/m ³ TWA 5 mg/m ³ TWA
Silicon	15 mg/m ³ TWA 5 mg/m ³ TWA	-	10 mg/m ³ TWA 5 mg/m ³ TWA

Appropriate engineering controls

Avoid exposure to welding fumes, radiation, spatter, electric shock, heated materials and dust. Ensure sufficient ventilation, local exhaust, or both, to keep welding fumes and gases from breathing zone and general area. Keep workplace and protective clothing clean and dry. Train the welder not to touch live electrical parts and to insulate himself from work and

ground. Check condition of protective clothing and equipment on a regular basis. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. Processing may form hazardous compounds, refer to section 10.

Individual protection measures, such as personal protective equipment

Eye protection	Welder's helmet or face shield with color absorbing lenses. Shield and filter to provide protection from harmful UV radiation, infrared and molten metal approved to standard EN379. Filter shade to be a minimum of shade 9.
Skin and body protection	Heat-resistant protective clothing. Wear safety boots, apron, arm and shoulder protection. Keep protective clothing clean and dry. Clothing should be selected to suit the level, duration and purpose of the welding activity. Wear appropriate gloves to prevent skin contact. Wear welding gloves.
Respiratory protection	Use an air purifying dust respirator when welding or brazing in a confined space, or when local exhaust or ventilation is not sufficient to keep exposure values within safe limits.
Hygiene measures	Handle in accordance with good industrial hygiene and safety practice.

Canadian Province Occupational Exposure Limits

Chemical name	Alberta OEL	British Columbia OEL	Manitoba OEL	New Brunswick - OEL	Newfoundl and & Labrador - OEL	Nova Scotia - OEL	Ontario OEL	Prince Edward Island - OEL	Quebec OEL	Saskatche wan - OEL
Aluminum	10 mg/m ³ TWA 5 mg/m ³ TWA	1.0 mg/m ³ TWA	1 mg/m ³ TWA	10 mg/m ³ TWA 5 mg/m ³ TWA	1 mg/m ³ TWA	1 mg/m ³ TWA	1 mg/m ³ TWA	1 mg/m ³ TWA	10 mg/m ³ TWA EV 5 mg/m ³ TWA EV 5 mg/m ³ TWA EV	10 mg/m ³ TWA 5 mg/m ³ TWA
Silicon	-	10 mg/m ³ TWA 3 mg/m ³ TWA	-	10 mg/m ³ TWA	-	-	-	-	10 mg/m ³ TWA EV	10 mg/m ³ TWA

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state	Solid
Color	Metallic
Odor	Odorless
Odor threshold	Not applicable
pH	Not applicable
Melting point/range °C	582 °C
Melting point/range °F	1080 °F
Boiling point/range °C	Not available
Boiling point/range °F	Not available

Flash point °C / °F	Not applicable
Evaporation rate	Not applicable
Flammability (Solid, Gas)	Not available
Lower explosion limit	Not applicable
Upper explosion limit	Not applicable
Vapor pressure	Not applicable
Vapor density	Not applicable
Relative density	6
Solubility	Insoluble in water
Partition coefficient (n-octanol/water)	Not applicable
Autoignition temperature °C	Not applicable
Autoignition temperature °F	Not applicable
Decomposition temperature °C	Not available
Decomposition temperature °F	Not available
Viscosity	Not available

10. STABILITY AND REACTIVITY

Reactivity	Stable under normal conditions. When using it may produce fumes and gases.
Chemical stability	Stable under normal conditions.
Possibility of hazardous reactions	Contact with chemical substances like acids or strong bases could cause generation of gas. Keep away from any possible contact with water, because of violent reaction and possible flash fire.
Conditions to avoid	Stable under normal conditions.
Incompatible materials	Incompatible with acids. Avoid contact with moisture and water. Reacts violently with water.
Hazardous decomposition products	When this product is used in a welding process, hazardous decomposition products would include those from 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. Refer to applicable national exposure limits for the fume compounds. Reasonably expected gaseous products would include: carbon oxides. Nitrogen oxides (NOx). Ozone. Air contaminants around the welding area can be affected by the welding process and influence the composition and quality of fumes and gases produced.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure	Dermal. Inhalation.
Symptoms	Prolonged inhalation may be harmful. Welding fumes cannot be classified simply. Their composition and quantity are dependent upon the metal being welded, the process,

procedures and electrodes being used. Overexposure to welding fumes may result in discomfort such as metal fume fever, dizziness, nausea, or dryness or irritation of nose, throat or eyes. May cause sensitization by skin contact.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Overexposure to welding fumes may affect pulmonary function and eyes.

Numerical measures of toxicity

Chemical name	Inhalation LC50:	Dermal LD50:	Oral LD50:
Aluminum	-	-	-
Silicon	-	= 3160 mg/kg Rat	3160 mg/kg Rat

ATEmix (dermal) Not available

ATEmix (oral) Not available

ATEmix (inhalation-gas) Not available

ATEmix (inhalation-vapor) Not available

ATEmix (inhalation-dust/mist) Not available

Carcinogenicity

Chemical name	ACGIH OEL - Carcinogens	IARC	OSHA Carcinogens	NTP
Aluminum	A4	-	-	-
Silicon	-	-	-	-

Canadian Province carcinogenicity limits

Chemical name	Alberta - Carcinogen	British Columbia - Carcinogen	Manitoba - Carcinogen	New Brunswick - Carcinogen	Nova Scotia - Carcinogen	Quebec - Carcinogen
Aluminum	-	-	ACGIH A4	-	ACGIH A4	-
Silicon	-	-	-	-	-	-

12. ECOLOGICAL INFORMATION

Ecotoxicity

Chemical name	Algae/aquatic plants	Fish LC50
Aluminum	-	-
Silicon	-	-

Persistence and degradability Not readily biodegradable.

Bioaccumulation

Chemical name	CAS-No	Partition coefficient (log Kow)	Bioconcentration factor (BCF)
Aluminum 7429-90-5	7429-90-5	-	-
Silicon 7440-21-3	7440-21-3	-	-

Mobility in soil This product is not mobile in the soil.

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

13. DISPOSAL CONSIDERATIONS

Disposal information As supplied, this product is a RCRA Hazardous Waste. Discard container or liner in accordance with federal, state, and local regulations.

Contaminated packaging Dispose in accordance with local, state and federal regulations.

14. TRANSPORTATION INFORMATION

Shipping Descriptions

DOT
Proper shipping name Not regulated

TDG
Proper shipping name Not regulated

IATA
Proper shipping name Not regulated

IMDG/IMO
Proper shipping name Not regulated

Marine Pollutants

Chemical name	CAS-No	USDOT Marine Pollutant	Canada TDG Marine Pollutant	IMDG Marine Pollutant
Aluminum	7429-90-5	-	-	-
Silicon	7440-21-3	-	-	-

Special Precautions Always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

15. REGULATORY INFORMATION

State regulations

U.S. state Right-to-Know regulations

Chemical name	CAS-No	Massachusetts - RTK	New Jersey - RTK	Pennsylvania - RTK
Aluminum	7429-90-5	X	X	X
Silicon	7440-21-3	X	X	X

California Prop. 65

Chemical name	CAS-No	California Prop. 65
Aluminum	7429-90-5	-
Silicon	7440-21-3	-

U.S. Federal Regulations

US EPA SARA 313

Chemical name	CAS-No	CERCLA/SARA Hazardous Substances RQ	SARA 313 - Threshold Values
Aluminum	7429-90-5	-	1.0 %
Silicon	7440-21-3	-	-

US EPA SARA 311/312 hazardous categorization

Not applicable

Chemical name	DSL/NDSL	Inventory - United States - Section 8(b) Inventory (TSCA)	U.S. - TSCA (Toxic Substances Control Act) - Section 12(b) - Export Notification
Aluminum	X	X	-
Silicon	X	X	-

Legend X - Listed

16. OTHER INFORMATION

NFPA

Health	Not available
Flammability	Not available
Instability	Not available

HMIS

Health	Not available
Flammability	Not available
Physical hazards	Not available

Notice: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA).

Prepared by Regulatory Affairs

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Revision note

Key to abbreviations

ACGIH (American Conference of Governmental Industrial Hygienists)
ATE (Average Toxicity Estimate)
DSL/NDSL (Domestic Substance List/Non-Domestic Substance List)
HMIS (Hazardous Materials Identification System)
IARC (International Agency for Research on Cancer)
IATA (International Air Transport Association)
IMDG/IMO (International Maritime Dangerous Goods/International Maritime Organization)
NFPA (National Fire Protection Association)
NTP (National Toxicology Program)
OEL (Occupational Exposure Level)
OSHA (Occupational Safety and Health Administration of the US Department of Labor)
PEL (Permissible Exposure Limit)
TSCA (Toxic Substance Control Act)
USEPA (United States Environmental Protection Agency)

Disclaimer

The information accumulated herein is believed to be accurate, but is not warranted to be, whether originating with the company or not. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable to their circumstances.

End of Safety Data Sheet