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Revision Number 1

1. IDENTIFICATION

Product identification

Product identifier	Certanium® AWS ER316L Stainless Steel MIG Welding Wire
Other means of identification	41701
Recommended use	Brazing Alloy, Welding Alloy
Restrictions on use	For industrial use only These items are only intended for normal welding purposes.

Supplier

Corporate Headquarters:
Cronatron, A Lawson Brand
Lawson Products, Inc.
8770 W.Bryn Mawr Ave.- Suite 900
Chicago, IL 60631
1-866-529-7664

Canadian Distribution Center:
Lawson Canada
7315 Rapistan Court
Mississauga, ON L5N 5Z4
(800) 323-5922

24 Hour Emergency Phone Number (888) 426-4851 (Prosar)

2. HAZARD(S) IDENTIFICATION

Hazard Classification

This product is normally not considered hazardous as shipped. Avoid contact with eyes. Avoid inhalation of dust from the product. When this product is used in a welding process the most important hazards are: heat, radiation, electric shock and welding fumes.

Skin sensitization	Category 1
Carcinogenicity	Category 2
Specific target organ toxicity (repeated exposure)	Category 1

Symbol



Signal word

DANGER

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

Prevention

P201 - Obtain special instructions before use
P202 - Do not handle until all safety precautions have been read and understood
P260 - Do not breathe dust/fume/gas/mist/vapors/spray
P264 - Wash face, hands and any exposed skin thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
P272 - Contaminated work clothing should not be allowed out of the workplace
P280 - Wear protective gloves/protective clothing and eye/face protection
P281 - Use personal protective equipment as required

Response

General

P314 - Get medical advice/attention if you feel unwell.
P308 + P313 - IF exposed or concerned: Get medical advice/attention

Eyes

P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes.
Remove contact lenses, if present and easy to do. Continue rinsing
P337 + P313 - If eye irritation persists: Get medical advice/attention

Skin

P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
P332 + P313 - If skin irritation occurs: Get medical advice/attention
P362 - Take off contaminated clothing and wash before reuse

Storage

P405 - Store locked up

Disposal

P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as 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).

Chemical name	CAS-No	Weight %
Iron	7439-89-6	60-70
Chromium	7440-47-3	15-25
Nickel	7440-02-0	5-15
Manganese	7439-96-5	1-11
Molybdenum	7439-98-7	0-5

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. Rinse mouth.

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)	Not applicable.
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).
Unsuitable extinguishing media	Not applicable.
Specific hazards	Welding arcs and sparks can ignite combustible and flammable materials. Hazardous Thermal Decomposition Products: Iron Oxide (rust). Manganese oxide. Oxides of nickel. Oxides of Aluminum. Chromium oxide. molybdenum oxide.
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. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

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
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Chemical name	OSHA PEL (TWA)	ACGIH OEL (TWA)	NIOSH - TWA
Iron	-	-	-
Chromium	1 mg/m ³ TWA	0.5 mg/m ³ TWA	0.5 mg/m ³ TWA
Nickel	1 mg/m ³ TWA	1.5 mg/m ³ TWA	0.015 mg/m ³ TWA 0.015 mg/m ³ TWA
Manganese	5 mg/m ³ Ceiling	0.02 mg/m ³ TWA 0.1 mg/m ³ TWA	3 mg/m ³ STEL 1 mg/m ³ TWA 1 mg/m ³ TWA
Molybdenum	15 mg/m ³ TWA	10 mg/m ³ TWA 3 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	Newfoundland and Labrador - OEL	Nova Scotia - OEL	Ontario OEL	Prince Edward Island - OEL	Quebec OEL	Saskatchewan - OEL
Iron	-	-	-	-	-	-	-	-	-	-
Chromium	0.5 mg/m ³ TWA	0.5 mg/m ³ TWA	0.5 mg/m ³ TWA	0.5 mg/m ³ TWA	0.5 mg/m ³ TWA	0.5 mg/m ³ TWA	0.5 mg/m ³ TWA	0.5 mg/m ³ TWA	0.5 mg/m ³ TWA	1.5 mg/m ³ STEL 0.5 mg/m ³ TWA
Nickel	1.5 mg/m ³ TWA	0.05 mg/m ³ TWA	1.5 mg/m ³ TWA	1 mg/m ³ TWA	1.5 mg/m ³ TWA	1.5 mg/m ³ TWA	1 mg/m ³ TWA	1.5 mg/m ³ TWA	1 mg/m ³ TWA	3 mg/m ³ STEL 1.5 mg/m ³ TWA
Manganese	0.2 mg/m ³ TWA	0.2 mg/m ³ TWA 0.2 mg/m ³ TWA	0.02 mg/m ³ TWA 0.1 mg/m ³ TWA	0.2 mg/m ³ TWA	0.02 mg/m ³ TWA 0.1 mg/m ³ TWA 0.02 mg/m ³ TWA 0.1 mg/m ³ TWA	0.02 mg/m ³ TWA 0.1 mg/m ³ TWA	0.2 mg/m ³ TWA 0.02 mg/m ³ TWA 0.1 mg/m ³ TWA	0.02 mg/m ³ TWA 0.1 mg/m ³ TWA 0.02 mg/m ³ TWA 0.1 mg/m ³ TWA	0.2 mg/m ³ TWA 0.2 mg/m ³ TWA	0.6 mg/m ³ STEL 0.2 mg/m ³ TWA 0.2 mg/m ³ TWA
Molybdenum	10 mg/m ³ TWA	3 mg/m ³ TWA	3 mg/m ³ TWA	10 mg/m ³ TWA	3 mg/m ³ TWA	3 mg/m ³ TWA	10 mg/m ³ TWA	3 mg/m ³ TWA	10 mg/m ³ TWA	20 mg/m ³ STEL

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
	3 mg/m ³ TWA	10 mg/m ³ TWA 3 mg/m ³ TWA 10 mg/m ³ TWA	10 mg/m ³ TWA		10 mg/m ³ TWA 3 mg/m ³ TWA 10 mg/m ³ TWA	10 mg/m ³ TWA	3 mg/m ³ TWA 10 mg/m ³ TWA 3 mg/m ³ TWA	10 mg/m ³ TWA 3 mg/m ³ TWA 10 mg/m ³ TWA		6 mg/m ³ STEL 10 mg/m ³ TWA 3 mg/m ³ TWA 10 mg/m ³ TWA 3 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	850-1100 °C
Melting point/range °F	1560*-2000 °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	6-9
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.

Chemical stability Stable under normal conditions.

Possibility of hazardous reactions Contact with chemical substances like acids or strong bases could cause generation of gas.

Conditions to avoid Stable under normal conditions.

Incompatible materials Incompatible with acids.

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. Manganese also has a low exposure limit in the USA. 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. The International Agency for Research on Cancer has classified welding fumes as possibly carcinogenic to humans (group 2B). 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. 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. Prolonged inhalation of nickel above safe exposure limits may cause cancer.

Numerical measures of toxicity

Chemical name	Inhalation LC50:	Dermal LD50:	Oral LD50:
Iron	-	-	= 30 g/kg (Rat)
Chromium	-	-	-
Nickel	-	-	> 9000 mg/kg (Rat)
Manganese	-	-	= 9 g/kg (Rat)
Molybdenum	-	-	-

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 RTK Carcinogens	NTP
Iron	-	-	-	-
Chromium	A4	Group 3	-	-
Nickel	-	Group 1 Group 2B	Listed	Known Reasonably Anticipated
Manganese	A4	-	-	-
Molybdenum	-	-	-	-

Canadian Province carcinogenicity limits

Chemical name	Alberta - Carcinogen	British Columbia - Carcinogen	Manitoba - Carcinogen	New Brunswick - Carcinogen	Nova Scotia - Carcinogen	Quebec - Carcinogen
Iron	-	-	-	-	-	-
Chromium	-	-	ACGIH A4	ACGIH A4	ACGIH A4	-
Nickel	-	IARC 2B	ACGIH A5	-	ACGIH A5	-
Manganese	-	-	ACGIH A4	-	ACGIH A4	-
Molybdenum	-	-	-	-	-	-

12. ECOLOGICAL INFORMATION

Ecotoxicity Very toxic to aquatic life

Chemical name	Algae/aquatic plants	Fish
Iron	-	13.6: 96 h Morone saxatilis mg/L LC50 static
Chromium	-	-
Nickel	0.18: 72 h Pseudokirchneriella subcapitata mg/L EC50 0.174 - 0.311: 96 h Pseudokirchneriella subcapitata mg/L EC50 static	1.3: 96 h Cyprinus carpio mg/L LC50 semi-static 100: 96 h Brachydanio rerio mg/L LC50 10.4: 96 h Cyprinus carpio mg/L LC50 static
Manganese	-	-
Molybdenum	-	-

Persistence and degradability Not readily biodegradable. The welding rods consist of elements that cannot degrade any further in the environment.

Bioaccumulation

Chemical name	CAS-No	Partition coefficient (log Kow)
Iron 7439-89-6	7439-89-6	-
Chromium 7440-47-3	7440-47-3	-
Nickel 7440-02-0	7440-02-0	-
Manganese 7439-96-5	7439-96-5	-
Molybdenum 7439-98-7	7439-98-7	-

Mobility in soil

Welding rods are not soluble in water or soil. Particles formed by working welding rods can be transported in the air.

Other adverse effects

Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment. In massive form, welding rods present no hazards to the aquatic environment. 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.

13. DISPOSAL CONSIDERATIONS

Disposal information

Consult appropriate federal, state and local regulatory agencies to ascertain proper disposal procedures. Discard container or liner in accordance with federal, state, and local regulations. Residue from welding consumables and processes could degrade and accumulate in soils and groundwater.

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
Iron	7439-89-6	-	-	-
Chromium	7440-47-3	-	-	-
Nickel	7440-02-0	-	-	-
Manganese	7439-96-5	-	-	-
Molybdenum	7439-98-7	-	-	-

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
Iron	7439-89-6	-	-	-
Chromium	7440-47-3	X	X	X
Nickel	7440-02-0	X	X	X
Manganese	7439-96-5	X	X	X
Molybdenum	7439-98-7	X	X	X

California Prop. 65

WARNING: This product contains a chemical(s) known to the state of California to cause cancer, birth defects or other reproductive harm

Chemical name	CAS-No	California Prop. 65
Iron	7439-89-6	-
Chromium	7440-47-3	-
Nickel	7440-02-0	Carcinogen
Manganese	7439-96-5	-
Molybdenum	7439-98-7	-

U.S. Federal Regulations

US EPA SARA 313

Chemical name	CAS-No	CERCLA/SARA Hazardous Substances RQ	SARA 313 - Threshold Values
Iron	7439-89-6	-	-
Chromium	7440-47-3	5000 lb 2270 kg 10 lb 4.54 kg	1.0 %
Nickel	7440-02-0	100 lb 45.4 kg	0.1 %
Manganese	7439-96-5	-	1.0 %
Molybdenum	7439-98-7	-	-

US EPA SARA 311/312 hazardous categorization

Not applicable

International inventories

All components of this product are listed on the following inventories: U.S.A. (TSCA 8(b)), Canada (DSL/NDL) or are exempt.

Chemical name	DSL/NDSL	Inventory - United States - Section 8(b) Inventory (TSCA)	U.S. - TSCA (Toxic Substances Control Act) - Section 12(b) - Export Notification
Iron	X	X	-
Chromium	X	X	-
Nickel	X	X	-
Manganese	X	X	-
Molybdenum	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