Welding Material Sales

Safety Data Sheet

Section 1: PRODUCT AND COMPANY IDENTIFICATION

Product Name(s): BD920, BDM7

Other Means of Identification

SDS number: 2902

Recommended use and restriction of use

Recommended use: Arc Welding

Restrictions on use: Unknown. Use appropriate welding procedures. Read this SDS before using product.

Manufacturer/Importer/Supplier/Distributor Information

Manufacturer Welding Material Sales
3940 Stern Ave
St. Charles IL 60174

Telephone No. 630-232-6421

Emergency Telephone No. 800-424-9300 **Email:** sales@weldingmaterialsales.com

Section 2: HAZARDS IDENTIFICATION

Classified according to the criteria of the Globally Harmonized System of Classification and Labeling of Chemicals (GHS) and OSHA Hazard Communication Standard (29 CFR 1910.1200)

Product Hazard Classification: These products are not considered hazardous as shipped. Use appropriate personal protective equipment (gloves, safety glasses, etc.) while handling the product to prevent injury.

Product Label Elements (as-shipped product)

Hazard Symbol: No symbol **Signal Word:** No signal word

Product Use Hazards which do not result in GHS classification:

Electric Shock: Electric shock from equipment can kill or cause severe burns.

Arc Rays (Radiation): Arc rays can burn skin and injure eyes. Skin cancer has been reported and Ultraviolet Radiation is listed as a carcinogen by NTP.

Hazardous Substance(s) formed under the conditions of use:

Fumes and Smoke: The welding fume produced from this welding electrode may contain the following constituent(s) and/or their complex metallic oxides as well as solid particles or other constituents from the consumables, base metal, or base metal coating not listed below. Overexposure to welding fumes may result in symptoms such as metal fume fever, dizziness, nausea, dryness or irritation of the nose, throat or eyes. Chronic overexposure to welding fumes may affect pulmonary function. Prolonged inhalation of nickel and chromium compounds above safe exposure limits can cause cancer.

Sparks and Spatter: The welding process often results in sparks and spatter that may cause injuries. Hot work pieces may cause burns and hot slag from the weld may move unexpectedly. Welding processes may start a fire or cause an explosion.

Section 3: COMPOSITION / /INFORMATION ON INGREDIENTS

Reportable Hazardous Ingredients

Chemical Identity	CAS-No.	Content in weight percent (%)
Carbon (C)	7440-44-0	0-1
Chromium and chromium alloys or compounds (as Cr)	7440-47-3	3-20
Cobalt (Co)	7440-48-4	0-11
Fluorides (as F)	7789-75-5	0-5
Fluorides (as F)	7783-48-4	0-1
Iron (Fe)	7439-89-6	55-90
Manganese (Mn)	7439-96-5	1-11
Manganese Oxide	1344-43-0	0-1
Molybdenum (Mo)	7439-98-7	0-9
Nickel (Ni)	7440-02-0	0-10
Niobium (Nb)	7440-03-1	0-4
Silica, Fused	60676-86-0	0-1
Silicon (Si)	7440-21-3	0.5-4
Silicon Dioxide (SiO_2)	14808-60-7	0-2
Titanium Dioxide (TiO_2)	13463-67-7	0-6
Tungsten (W)	7440-33-7	0-4
Vanadium (V)	7440-62-2	0-2
Zirconium Alloys (as Zr)	7440-67-7	0-1

Composition Comments: The term “Hazardous Ingredients” should be interpreted as a term defined in Hazard Communication standards and does not necessarily imply the existence of a welding hazard. The product may contain additional non-hazardous ingredients or may form additional compounds under the condition of use. Refer to Sections 2 and 8 for more information

Section 4: FIRST-AID MEASURES

Ingestion: Unlikely due to form of product. Avoid hand, clothing, food and drink contact with metal fume or powder which can result in ingestion of particulate during hand to mouth activities such as drinking, eating, smoking, etc. If ingested, do not induce vomiting. Contact a poison control center. If symptoms develop, immediately seek medical attention.

Inhalation: Excessive or repeated inhalation may provoke either immediate collapse or delayed toxic effects. These require immediate medical attention. Move victim to fresh air if breathing is difficult. If breathing has stopped, perform artificial respiration and immediately obtain medical assistance.

Skin Contact: Remove contaminated clothing and wash the skin thoroughly with soap and water. For reddened or blistered skin, or thermal burns, immediately obtain medical assistance.

Eye Contact: Dust or fume from this product should be flushed from the eyes with copious amounts of clean, tepid water until transported to an emergency medical facility. Do not allow victim to rub or keep eyes tightly closed. Immediately obtain medical assistance.

Arc rays can injure eyes. If exposed to arc rays, move victim to a dark room, remove contact

lenses as necessary for treatment, cover eyes with a padded dressing and rest. Obtain medical assistance if symptoms persist.

Other first aid measures

Electrocution: Stop power to the equipment or remove the victim from contact with live circuits, if this can be done without risk to yourself. Organize transport to a medical facility.

If breathing has stopped, perform artificial respiration and immediately obtain medical assistance.

Electrical burns are always serious and require specialized medical attention. While waiting for emergency responders, place a sterile dressing over the burn and treat the victim for the effects of shock.

Shock: Shock is seen in serious accident victims. If not treated it can end in death. Lay the victim flat on their back, keep warm and comfortable. Seek immediate emergency medical assistance. Do not give the victim anything to drink.

Symptoms:
Cold sweat on face
Rapid, weak and sometimes irregular pulse
The victim remains conscious unless circulatory problems cause fainting

Most important symptoms/effects, acute and delayed

Symptoms: 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. May aggravate pre-existing respiratory problems (e.g. asthma, emphysema)

Long-term (chronic) overexposure to welding fumes can lead to siderosis, central nervous system effects, bronchitis and other pulmonary effects.

Hazards: Welding hazards may include physical and health hazards such as, but not limited to electric shock, radiation burns, thermal burns, physical strains and potential health effects due to overexposure to welding fume or dust.

Indication of immediate medical attention and special treatment needed

Treatment: Treat symptomatically

Section 5: FIRE-FIGHTING MEASURES

No specific recommendations for welding consumables.

As shipped this product is non-flammable, non- reactive, non-explosive, and essentially non-hazardous until welded. However, welding arc, sparks, molten metal, slag, and hot work surfaces can ignite combustibles or cause explosions.

Refer to the American National Standard Z49.1 “Safety in Welding, Cutting, and Allied Processes” published by the American Welding Society, http://pubs.aws.org for information regarding fire prevention, fire protection, hot work authorization, welding and cutting of containers, and industrial applications for fire prevention and protection.

Suitable (and unsuitable) extinguishing media

Suitable extinguishing media: As shipped the product will not burn. In case of fire in the surroundings: use appropriate extinguishing agent.

Unsuitable extinguishing media: None known

Special protective equipment and precautions for fire-fighters

Special fire-fighting procedures: Use standard firefighting procedures and consider the hazards of other involved materials.

Special protective equipment for fire-fighters: Selection of respiratory protection for fire-fighting: follow the general fire precautions indicated in the workplace. Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Section 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment, and emergency procedures:

If airborne dust and/or fume is present use adequate engineering controls and, if needed, personal protection to prevent overexposure. Refer to recommendations in Section 8.

Methods and materials for containment and cleaning up:

Clean up spills immediately, observing precautions in the personal protective equipment in Section 8. Avoid generating dust. Prevent product from entering any drains, sewers or water sources. Refer to Section 13 for proper disposal.

Section 7: HANDLING AND STORAGE

Precautions for safe handling:

Keep formation of airborne dust to a minimum. Provide adequate exhaust ventilation where dust is formed. Refer to the American National Standard Z49.1 "Safety in Welding, Cutting, and Allied Processes" published by the American Welding Society, http://pubs.aws.org and OSHA Publication 2206 (29CFR1910), US Government Printing Office, www.gpo.gov.

Conditions for safe storage, including any incompatibilities:

Store in closed container in a dry place away from incompatible materials. Store in accordance with local/regional/national regulations.

Section 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

Chemical Identity	OSHA PEL TWA (mg/m^3)	ACGIH TLV TWA (mg/m^3)	NIOSH RELs TWA (mg/m^3)
Chromium and chromium compounds, (Cr)	1 metal; 0.5 Chromium II; 0.5 Chromium III; 0.005 Chromium VI	0.5 metal; 0.5 Chromium III; 0.01 Chromium VI	
Chrome Oxide	1 metal; 0.5 Chromium II; 0.5 Chromium III; 0.005 Chromium VI	0.5 metal; 0.5 Chromium III; 0.01 Chromium VI	
Cobalt (Co)	0.1 for metal dust and fume	0.02	0.05 for metal dust and fume
Fluorides (as F)	2.5	2.5	2.5
Iron (Fe)	15 total dust; 5 respirable dust; 5 fume	10 total dust, 5 fumes	

Iron Oxide (Fe_2O_3)	10 fume	5 **R**	5 dust and fume, as Fe
Manganese and inorganic compounds (Mn)	C 5	0.02 **R**; 0.1 **I**	1; C 3
Molybdenum and insoluble compounds (Mo)	15 total dust	10 **I**; 3 **R**	
Molybdenum and soluble compounds (Mo)	5	0.5 **R**	
Nickel, insoluble compounds (Ni)	1	0.2 **I*** *inorganic only	0.015* *as Ni
Nickel, soluble compounds (Ni)	1	0.1 **I*** *inorganic only	0.015* *as Ni
Silica, amorphous, fused	0.1 respirable dust	TLV withdrawn due to insufficient data	
Silicon (Si)	15 total dust, 5 respirable	TLV withdrawn due to insufficient data	
Silicon Dioxide (SiO_2)	0.1 respirable	0.025 respirable	
Titanium Dioxide (TiO_2)	15 total dust	10	
Tungsten and insoluble compounds (W)		5, STEL 10	5, STEL 10
Tungsten and soluble compounds (W)		1, STEL 3	
Vanadium pentoxide, (V)	C 0.5 respirable dust, as V_2O_5 C 0.1 Fume, as V_2O_5		C 0.05 15-min, except Vanadium metal and Vanadium carbide
Zirconium Alloys (Zr)	5	5, STEL 10	5, STEL 10

Additional exposure limits under the conditions of use

Chemical Identity	**OSHA PEL** TWA	**ACGIH TLV** TWA	**NIOSH RELs** TWA
Carbon Dioxide	5,000 ppm, 9,000 mg/m^3	5,000 ppm, 9,000 mg/m^3; STEL 30,000 ppm, STEL 54,000 m/m^3	5,000 ppm, 9,000 mg/m^3; STEL 30,000 ppm, STEL 54,000 m/m^3
Carbon Monoxide	50 ppm, 55 mg/m^3	25 ppm, 29 m/m^3	35 ppm, 40 mg/m^3; C 200ppm, C 229 mg/m^3
Nitrogen Dioxide	C 5 ppm, $9mg/m^3$	0.2 ppm	STEL 1 ppm, STEL 1.8 mg/m^3
Ozone	0.1 ppm, 0.2 mg/m^3	0.2 ppm, 0.4 mg/m^3 ($\leq$ 2hours)	C 0.1 ppm, C 0.2 mg/m^3
Manganese – Fume – as Mn	C $5mg/m^3$		1 mg/m^3; STEL 3 mg/m^3
Manganese – inhalable fraction – as Mn		0.1 mg/m^3	

Manganese – respirable fraction – as Mn		0.02 mg/m^3	

Note: PEL and TLV values are TWA unless otherwise noted with C, **R** or STEL.	
CAS No: Chemical Abstract Service registry number.	PEL: Permissible Exposure Limit.
OSHA: Occupational Health and Safety Administration.	REL: Recommended Exposure Limit
ACGIH: American Conference of Governmental Industrial Hygienists.	
NIOSH: U.S. National Institute for Occupational Safety and Health	
EPCRA: Emergency Planning and Community Right-to-Know Act.	
TLV: Threshold Limit Value – the airborne concentration of substances which is believed that nearly all workers may be repeatedly exposed day after day without adverse health effects.	
TWA: 8-Hour Time Weighted Average – the time weighted average concentration of exposure that should not be exceeded for any 8-hour work shift of a 40-hour work week.	
STEL: Short Term Exposure Limit – a 15-minute time weighted average concentration of exposure that should not be exceeded at any time during a workday even if the 8-hour TWA is within limits.	
C: Ceiling Value – concentration that should not be exceeded during any part of the working exposure.	
I: Measured as inhalable fraction of the aerosol	**R**: Measured as respirable of the aerosol

Source: Guide to Occupational Exposure Values. Cincinnati: ACHIG Publications, 2015. Print.

- ACGIH® Threshold Limit Values (TLVs) for Chemical Substances
  - 2015 TLVs® and BEIs®: *Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices*. ACGIH®, Cincinnati OH (2015)
- OSHA Permissible Exposure Limits (PELs)
  - Title 29, Code of Federal Regulations, Part 1910.1000-1910.1200, Air Contaminants, Final Rule, specifies in Tables Z-1, Z-2, and Z-3; Federal Register 58:35338-35351, June 30, 1993; corrected in Federal Register 58:40191, July 27, 1993; amended in Federal Register 60:9624, February 21, 1995; and subsequent corrections/amendments/proposals through Federal Register 71:10373, February 28, 2006. Reviewed at http://www.osha.gov/pls/oshaweb/owadisp.showdocument?ptable=STANDARDS&p_id=9992.
- NIOSH Recommended Exposure Limits (RELs)
  - NIOSH Pocket Guide to Chemical Hazards: Introduction. Available online at: http://www.cdc.gov/niosh/npg/pgintrod.html (Reviewed 2014).

Appropriate Engineering Controls

Ventilation: Use enough ventilation, local exhaust at the arc, or both to keep the fumes and gases from the worker's breathing zone and general area. Train the welder to keep his head out of the fumes. **Keep exposure as low as possible.**

Individual protection measures, such as personal protective equipment

General information:

Exposure Guidelines: Threshold Limit Values (TLVs) and Biological Exposure Indices (BEIs) are values published by the American Conference of Government Industrial Hygienists (ACGIH). ACGIH Statement of Positions regarding TLVs® and BEIs® states that the TLV-TWA should be used as a guide in the control of health hazards and should not be used to indicate a fine line between safe and dangerous exposures. See Section 10 for information on potential fume constituents of interest.

Eye/face protection:

Wear a helmet or face shield with filter lens shade number 12 or darker for open arc processes. No shade lens recommendation for submerged arc processes. Shield others by providing screens and goggles.

Skin/Hand Protection: Wear protective gloves.

Other: Protective Clothing: Wear hand, head and body protection which helps to prevent injury from radiation, sparks and electrical shock. See Z49.1 for more detailed information. At a minimum protective clothing includes welder's gloves and a protective face shield, and may include arm protectors, aprons, hats, shoulder protection, and dark substantial clothing.

Respiratory Protection: Use enough ventilation and local exhaust to keep fumes and gases from your breathing zone and general area. Keep your head out of the fumes.

Hygiene measures: Do not eat, drink or smoke when using this product. Wash hands after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Cored Welding Wire	**Color:**	No data available
Physical state:	Solid	**Odor:**	No data available
Form:	Solid	**Odor threshold:**	No data available
pH:	Not applicable	**Viscosity:**	Not applicable
Flash point:	Not applicable	**Evaporation rate:**	Not applicable
Vapor pressure:	Not applicable	**Vapor density:**	Not applicable
Viscosity:	Not applicable	**Relative density:**	No data available
Melting point/freezing point:	No data available	**Solubility(ies)**	
Upper/lower limit on flammability or explosive limits		**Solubility in water:**	No data available
Flammability limit – upper (%)**:**	No data available	**Solubility (other):**	No data available
Flammability limit – lower (%)**:**	No data available	**Auto-ignition temperature:**	No data available
Explosive limit – upper (%)**:**	No data available	**Decomposition temperature:**	No data available
Explosive limit – lower (%)**:**	No data available	**Partition coefficient (n-octanol/water):**	No data available
Flammability (solid, gas):	No data available		

Section 10: STABILITY AND REACTIVITY

Reactivity: Contact with acids or strong bases can result in gas formation.

Chemical stability: The product is stable under normal conditions.

Conditions to avoid: Avoid heat, moisture or contamination.

Incompatible materials: Strong oxidizing substances. Strong acids. Strong bases.

Hazardous decomposition products:

Fumes and gases produced during welding are chemically very complex, and cannot be classified simply. Their composition and quantity are dependent upon the welding consumables used, the metal being welded, the welding process, and other factors. When the electrode is consumed, the fumes and gas decomposition products generated are different in percent and form from the ingredients listed in Section 3. The composition of these fumes and gases are the concerning matter. Decomposition products include those originating from the volatilization, reaction, or oxidation of the ingredients shown in Section 3, plus those from the base metal, coating and the other factors noted above. Reasonably expected fume constituents include: Fluorides and oxides, silicates, or carbonates formed from the ingredients. Ultraviolet radiation given off by welding can also react with chlorinated hydrocarbon vapors from cleaning and degreasing products to form phosgene gas, as well as react with oxygen and nitrogen to produce ozone and nitrogen oxides. Other gaseous reaction products may include carbon monoxide, carbon dioxide, and fluorine.

Established OSHA exposure limits for the hazardous ingredients are listed in Section 8. The ACGIH-1985 preface states: "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."

Section 11: TOXICOLOGY INFORMATION

Information on likely routes of exposure

Inhalation: Potential chronic health hazards related to the use of welding consumables are most likely to stem from inhalation exposure.

Skin contact: Arc rays can burn the skin and skin cancer has been reported.

Eye contact: Arc rays can injure eyes.

Symptoms related to the physical, chemical and toxicological characteristics

Inhalation:

Chromium (VI)	Chromates can cause ulceration, nasal septum perforation, and severe bronchial tube and lung irritation. Liver damage and allergic reactions, including skin rash have been reported. Asthma has been reported. Skin contact may result in irritation, ulceration, sensitization and contact dermatitis. Chromates contain the hexavalent form of chromium which is listed by the IARC (International Agency for Research on Cancer) and NTP (National Toxicology Program) as posing a cancer risk to humans.
Manganese	Overexposure to manganese fumes may affect the brain and central nervous system, resulting in poor coordination, difficulty speaking, and arm or leg tremor. These conditions can be irreversible.
Nickel	Nickel and its compounds are listed by the IARC and NTP as posing respiratory cancer risks. Nickel and its compounds cause skin sensitization with symptoms ranging from slight itch to severe dermatitis.

Carcinogenicity

Product: Arc Rays: Use of this product produces arc rays that have been reported to cause skin cancer.

Specified substances may be present in the welding fumes and are dangerous to your health. Specific classification of welding fumes is difficult because of the varying base metals, coatings, air contamination and processes.

Welding Fume	IARC-2B	Possibly carcinogenic to humans
Chromium (VI)	IARC-1	Carcinogenic to humans
Chromium (VI)	NTP-K	Known to be a human carcinogen
Cobalt	IARC-2B	Possibly carcinogenic to humans
Nickel	IARC-2B	Possibly carcinogenic to humans
Nickel	NTP-K	Known to be a human carcinogen
Titanium Dioxide	IARC-2B	Possibly carcinogenic to humans
Vanadium Pentoxide	IARC-2B	Possibly carcinogenic to humans

Section 12: ECOLOGICAL INFORMATION

This product may corrode under normal environmental conditions, but otherwise degrades slowly or not at all. Avoid conditions that could lead to accumulation in soils or groundwater.

Nickel powder: Category 3 (chronic harm to the environment)
Harmful to aquatic life with long lasting effect (particles < 1mm diameter)

Section 13: DISPOSAL CONSIDERATIONS

General Information:

Avoid or minimize the generation of waste wherever possible. Recycle in an environmentally acceptable and regulatory compliant manner, when practical. Dispose of non-recyclable products in accordance with all applicable Federal, State, and Local requirements.

Disposal Instructions:

Discharge or disposal may be subject to national, state or local laws. Do not allow to enter drains, sewers or watercourses. Disposal of this product may be regulated as a Hazardous Waste. The welding consumable and/or by-products from the process (including, but not limited to slag, dust, etc.) may contain levels of leachable heavy metals such as Chromium. Prior to disposal, a representative sample must be analyzed in accordance with US EPA's Toxicity Characteristic Leaching Procedure (TCLP) to determine if any constituents exist above regulated threshold levels. Discard any product, residue, disposable container, or liner in an environmentally acceptable manner according to Federal, State and Local Regulations.

Section 14: TRANSPORT INFORMATION

No international regulations or restrictions are applicable.
No special precautions are required.

DOT: No regulations or restrictions	**TDG:** No regulations or restrictions
IMDG: No regulations or restrictions	**IATA:** No regulations or restrictions

Section 15: REGULATORY INFORMATION

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

USA: Under the OSHA Hazard Communication Standard these products are considered hazardous.

These products contain or produce a chemical known to the state of California to cause cancer and birth defects (or other reproductive harm). (California Health and Safety Code § 25249.5 et seq.)

United States EPA Toxic Substance Control Act: All constituents of these products are on the TSCA inventory list or are excluded form listing.

EPCRA/SARA Tittle III

The product identified in Section 1 contains or produces one or more chemicals subject to the reporting requirements of section 311, 312, 313 of Emergency Planning and Community Right-to-know Act (EPCRA) of 1986 (40 CFR 372 and 370). This product may contain the following chemicals subject to section 313 reporting: Chromium, Chromium Compounds, Nickel, Nickel Compounds, Manganese, Manganese Compounds, Aluminum, Aluminum Compounds, Barium Compounds, Cobalt, Cobalt Compounds, Vanadium Compounds, Copper, and Copper compounds; refer to Section 3. If you are unsure whether you are subject to the reporting requirements of EPCRA section 313, or need more information, call the EPA's EPCRA Call center at 800 424-9346.

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Section 16: OTHER INFORMATION

Revision Date: 1/16/2018

Further Information: Additional information is available by request.

Disclaimer:

This welding consumable is designed and marketed for arc welding under appropriate conditions of use. WELDING MATERIAL SALES declines all responsibility for accidents, injury, loss, damage or any other outcome of improper use of the product. It is essential to choose the correct welding consumable for the job: the wrong one will give unsound welds. The choice is not always obvious so consult us first. The product must be welded under the correct conditions: see technical data sheet. Welding wires should not be substituted for solid wires used for mechanical, electrical, medical or food preparation purposes. Only those persons who have undergone a nationally-recognized training course in the appropriate welding procedure and who fully understand the risks involved, should carry out welding with this product. Regulatory requirements are subject to change and may differ between various locations. Compliance with all applicable Federal, State and Local laws and regulations remain the responsibility of the user.

The following references give further information on safety during welding:
Safety in Welding, Cutting and Allied Processes, **Z49.1-94,** American Welding Society, 550 N.W. LeJeune Road, Miami, Florida 33126, USA
Guide for Welding Fume Control, **F3.1-89,** American Welding Society

This data is believed to be accurate and was obtained from recognized technical sources, but no warranties are expressed or implied.