

**1. PRODUCT AND COMPANY IDENTIFICATION:**

**PRODUCT NAME:** Stainless Steel Welding Rod "312-16 Alloy"

**FORNEY SKUs:** **44556, 44557, 44559, 44560**

**MANUFACTURER:** Forney Industries, Inc.  
2057 Vermont Dr.  
Fort Collins, CO 80526

Phone: 800-851-6038  
Email: customerservice@forneyind.com  
Emergency Response Phone: 1-800-535-5053  
International Emergency Response Phone: 352-323-3500

**EMERGENCY TELEPHONE NUMBER:** 631-547-5470

**2. HAZARD IDENTIFICATION:**

**Emergency Overview:** This product is normally not considered hazardous as shipped. Avoid eye contact or inhalation of dust from the product. When this product is used in a welding process, the most important hazards are welding fumes, heat, radiation and electric shock. This product contains nickel, which is classified as toxic by prolonged inhalation, a skin sensitizer and a suspect carcinogen. Nickel powder is harmful for the environment.

**Classification of the Substance/Mixture:**

**Carcinogenicity, Category 1A**

**Specific Target Organ Toxicity (Repeated Exposure), Category 1**

**Labelling:**



**Symbols:**

**Signal Word:** Danger

**Hazard Statements:**

**H350** – May cause cancer.

**H372** – Causes damage to organs through prolonged or repeated exposure.

**Precautionary Statements:**

**P201** – Obtain special instructions before use.

**P202** – Do not handle until all safety precautions have been read and understood.

**P281** – Use personal protective equipment as required.

**P308+P313** – IF exposed or concerned: Get medical advice/attention.

**P405** – Store locked up.

**P260** – Do not breathe dust/fume/gas/mist/vapours/spray.

**P264** – Wash thoroughly after handling.

**P270** – Do not eat, drink or smoke when using this product.

**P314** – Get medical advice/attention if you feel unwell.

**Classification of the Substance/Mixture:**

**Carcinogenicity, Category 2**

**Sensitization – Skin, Category 1B**

**Acute Toxicity: Inhalation, Category 4**

**Acute Toxicity: Oral, Category 4**

**Labelling:**



**Symbols:**

**Signal Word:** Warning

**Hazard Statements:**

**H351** – Suspected of causing cancer.

**H317** – May cause an allergic skin reaction.

**H332** – Harmful if inhaled.

**H302** – Harmful if swallowed.

**Precautionary Statements:**

**P201** – Obtain special instructions before use.

**P202** – Do not handle until all safety precautions have been read and understood.

**P281** – Use personal protective equipment as required.

**P308+P313** – IF exposed or concerned: Get medical advice/attention.

**P405** – Store locked up.

**P272** – Contaminated work clothing should not be allowed out of the workplace.

**P280** – Wear protective gloves.

**P302+P352** – IF ON SKIN: Wash with plenty of soap and water.

**P333+P313** – If skin irritation or rash occurs: Get medical advice/attention.

**P363** – Wash contaminated clothing before reuse.

**P261** – Avoid breathing dust/fume/gas/mist/vapours/spray.

**P314** – Get medical advice/attention if you feel unwell.

**P271** – Use only outdoors or in well-ventilated area.

**P304 + P340** – IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

**P312** – Call a POISON CENTER or doctor/physician if you feel unwell.

**P264** – Wash thoroughly after handling.

**P270** – Do not eat, drink or smoke when using this product.

**P301 + P312** – IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.

**P330** – Rinse mouth.

**Classification of the Substance/Mixture:**

**Aquatic Hazard (Long-Term), Category 3**

**Labelling:**

**Symbols:** No pictogram

**Signal Word:** No signal word

**Hazard Statements:**

**H412** – Harmful to aquatic life with long lasting effects.

**Precautionary Statements:**

**P273** – Avoid release to the environment.

**3. COMPOSITION / INFORMATION ON INGREDIENTS:**

Chemical Identity	CAS #	Range %	OSHA PEL (mg/m3)	ACGIH-TLV (mg/m3)	Carcinogenicity	R-Phrase
Bentonite	1302-78-9	1-11	NR	NR	No	
Calcium Carbonate	1317-65-3	1-11	5 ( as CaO )	10	No	
#Chromium	7440-47-3	20-30	1.0 (Metal) .05 (Cr II & Cr III Compounds) 0.005(Cr VI Compounds) 0.01 ( Cr VI Insoluble Compounds)	0.5 ((Metal) 0.5 (Cr III Compounds) 0.05(Cr VI Soluble Compounds)	Yes	
Feldspar	68476-25-5	1-11	NR	NR	No	
Calcium Fluoride	7789-75-5	1-11	2.5 ( as F )	2.5 ( as F )	No	
#Manganese	7439-96-5	1-11	5	1	No	
#Nickel	7440-02-0	5-15	1	1	Yes	R40;R48/2 3;R45;R52/ 53
Titanium Dioxide	13463-67-7	10-20	15	10	No	
Potassium Silicate	1312-76-1	1-11	NR	5	No	
Iron	7439-89-6	30-40	10 ( as Fe2O3 )	10 ( as Fe2O3 )	No	

**Important** This section covers the materials of which the products manufactured. The fumes and gases produced during normal use of this product are covered in section 10. The term "Hazardous" in "Hazardous Material" should be interpreted as a term required and defined in OSHA Hazard Communication Standard 29CFR 1910-1200 and it does not necessarily imply the existence of hazard. The chemicals or compounds reportable by Section 313 of SARA are marked by the symbol #.

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#### **4. FIRST AID MEASURES:**

**Inhalation:** Remove to fresh air immediately or administer oxygen. Get medical attention immediately.

**Skin:** Flush skin with large amounts of water. If irritation develops and persists, get medical attention.

**Eye:** Flush eyes with water for at least 15 minutes. Get medical attention.

**Ingestion:** Obtain medical attention immediately if ingested.

**Electric Shock:** Disconnect and turn off the power. Use a nonconductive material to pull victim away from contact with live parts or wires. Immediately contact a physician.

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#### **5. FIRE-FIGHTING MEASURES:**

**Suitable Extinguishing Media:** No specific recommendations for welding consumables. Welding arcs and sparks can ignite combustible and flammable materials. Use the extinguishing media recommended for the burning material and fire situation.

**Unsuitable Extinguishing Media:** Not applicable

**Specific Hazards Arising From Chemical:** Not applicable

**Protective Equipment:** Fire fighters should wear complete protective clothing including self-contained breathing apparatus.

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#### **6. ACCIDENTAL RELEASE MEASURES:**

**Personal Precautions:** Refer to section 8.

**Environment Precautions:** Refer to section 13.

**Cleaning Measures:** 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.

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#### **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. Do not ingest. Some individuals can develop an allergic reaction to certain materials. Retain all warning and identity labels.

**Conditions for Safe Storage:** Store in dry place in closed packages. Keep separate from chemical substances like acids and strong bases, which could cause chemical reactions.

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#### **8. EXPOSURE CONTROLS/ PERSONAL PROTECTION:**

**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 work place and protective clothing clean and dry. Train welders to avoid contact with live electrical parts and insulate conductive parts. Check condition of protective clothing and equipment on a regular basis.

**Exposure limits:** Use industrial hygiene equipment to ensure that exposure does not exceed applicable national exposure limits. The limits defined under section 3 can be used as guidance. Unless noted, all values are for 8 hour time weighted average. For information about welding fume analysis refer to section 10.

**Biological limits:** No available data

**Personal protection:**

**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.

**Hands protection:** Wear appropriate gloves to prevent skin contact.

**Eyes protection:** Welder's helmet or face shield with colour absorbing lenses.

**Skin protection:** Wear safety boots, apron, arm and shoulder protection. Keep protective clothing clean and dry.

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## 9. PHYSICAL AND CHEMICAL PROPERTIES:

**Appearance:** Solid, non-volatile with varying color.

**Odour:** Odourless

**Melting Point/Melting Range:** >2300° F, >1300° C

**Solubility:** Insoluble in water.

**Other Information:** No available data.

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## 10. STABILITY AND REACTIVITY:

**Chemical Stability:** This product is stable under normal conditions.

**Hazardous Reactions:** Contact with chemical substances like acids or strong bases cause generation of gas.

**Conditions to Avoid:** This product is stable under normal conditions.

**Incompatible Materials:** Reacts with acid.

**Hazardous Decomposition Products:** When this product is used in a welding process, hazardous decomposition product would include those from volatilization, reaction or oxidation of the material 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. Fumes from this product contain compounds of the following chemical elements.

Fume analysis:	Fe	Mn	F	Pb	Cu	Ni	Cr
Weight% less than	20	5	15	0.1	0.1	5	15

The rest is not analysed, according to available standards. Refer to applicable national exposure limits for fume compounds, including those exposure limits for fume compounds found in section 3. 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 quality of fumes and gases produced.

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## 11. TOXICOLOGICAL INFORMATION:

**Signs and Symptoms of Overexposure:** 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 contaminants and processes. The Internal Agency for Research on Cancer has classified welding fumes as possible carcinogenic to humans (Group 2B).

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

**Chronic Effects:** Overexposure to welding fumes may affect pulmonary function. Prolonged inhalation of nickel and chromium compounds above safe exposure limits can cause cancer. 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 titanium dioxide above safe exposure limits can cause cancer.

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## 12. ECOLOGICAL INFORMATION:

**Toxicity:** No available data.

**Persistence and Degradability:** No available data.

**Bio accumulative Potential:** No available data.

**Mobility in Soil:** No available data.

**Other Adverse Effects:** No available data.

Welding materials could degrade into components originating from the materials used in the welding process. Avoid exposure to conditions that could lead to accumulation in soils or groundwater. Nickel powder is harmful to the environment. Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

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## 13. DISPOSAL CONSIDERATIONS:

**Product:** For product elimination, consult recycling companies or appropriate local authority.

**USA RCRA:** Unused products or product residue containing chromium is considered hazardous waste if discarded, RCRA ID Characteristics Toxic Hazardous Waste D007.

Residue from welding consumables and processes could degrade and accumulate in soils and groundwater. Welding slag from this product typically contains mainly the following components originating from the coating of the electrode.

Slag analysis:	Al <sub>2</sub> O <sub>3</sub>	CaO	F	Fe <sub>2</sub> O <sub>3</sub>	K <sub>2</sub> O	MnO	SiO <sub>2</sub>	Na <sub>2</sub> O	TiO <sub>2</sub>	Cr <sub>2</sub> O <sub>3</sub>
% less than	10	15	5	10	5	10	25	5	30	20

**Package:** May be disposed in approved landfills provided local regulations are observed.

#### 14. TRANSPORT INFORMATION:

**UN-number:** Not applicable

**UN proper shipping name:** Not applicable

**Transport hazard class:** Not applicable

**Packing group:** Not applicable

**Environmental hazards:** Not applicable

**Special precautions for users:** Not applicable

**Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code:** No international regulations or restrictions are applicable.

#### 15. REGULATORY INFORMATION:

**Safety, health and environment regulations/legislation specific for the substance or mixture:** 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. Wear correct hand, head, eye and body protection.

**Chemical safety assessment:** No

USA: Under the OSHA Hazard Communication Standard, this product is considered hazardous. 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.) United States EPA Toxic Substance Control Act: All constituents of this product are on the TSCA inventory list or are excluded from listing.

##### EPCRA/SARA Title III Toxic Chemicals

The following metallic components are listed as SARA 313 "Toxic Chemicals" and potential subject to annual SARA reporting. See Section 3 for weight percentage.

Ingredient Name	Disclosure Threshold
Chromium	1.0% de minimis Concentration
Magnesium	1.0% de minimis Concentration
Nickel	0.1% de minimis Concentration

#### 16. OTHER INFORMATION:

The information in this document is believed to be correct as of the date issued. However, no warranty is expressed to be implied regarding the accuracy or completeness of this information. This information and product are furnished on the condition that the person receiving them shall make his own determinations as to the suitability of the product for his particular purpose and on the condition that he assumes the risk of his use thereof.

This Safety Data Sheet complies with the EC directives 91/155/EEC and 93/112/EEC, including modifications 2001/58/EC.

Complies with OSHA Communication Standard 29 CFR 1910.1200 and Superfund Amendments and Reauthorization Act (SARA) of 1986 Public Law 99-499

**R-Phrases:**

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**R40** – Limited evidence of a carcinogenic effect. **R43** – May cause sensitization by skin contact. **R48/23** – Toxic: danger of serious damage to health by prolonged exposure through inhalation. **R45** – May cause cancer. **R52/53** – Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

**S-Phrases:**

**S2** – Keep out of reach of children. **S22** – Do not breathe dust. **S24** – Avoid contact with skin. **S37** – Wear suitable gloves.

END OF SAFETY DATA SHEET.