1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: AWS A5.1 E7018  
Product Code: TOKO E7018  
Recommended use: Welding  
Information on Manufacturer: TOKO GROUP LTD  
(WUXI, CHINA)  
 jp@toko.com  

2. HAZARD IDENTIFICATION

Color: gray  
Physical State: Solid  
Odor: Odorless

Mixture or Pure Substance: Mixture

GHS Classification

Physical Hazards
None

Health Hazard
Acute Oral Toxicity
Category 4
Skin Corrosion/Irritation
Category 2
Serious Eye Damage/Eye Irritation
Category 2A
Respiratory Sensitization
Category 1
Skin Sensitization
Category 1
Carcinogenicity
Category 1A

Other hazards
None

Labeling
Signal Word: DANGER

Hazard Statements
H302 - Harmful if swallowed
H319 - Causes serious eye irritation
H315 - Causes skin irritation
H317 - May cause an allergic skin reaction
H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled
H350 - May cause cancer

Precautionary Statements
P201 - Obtain special instructions before use
P202 - Do not handle until all safety precautions have been read and understood
P261 - Avoid breathing dust or fume.
P285 - In case of inadequate ventilation wear respiratory protection
P280 - Wear protective gloves, protective clothing and eye protection.
P264 - Wash face, hands and any exposed skin thoroughly after handling.
P272 - Contaminated work clothing should not be allowed out of the workplace.
P308 + P313 - IF exposed or concerned: Get medical attention/advice.
P321 - Specific treatment (see supplemental first aid instructions on this label).
P302+ P352 - IF ON SKIN: Wash with plenty of soap and water
P333 + P313 - If skin irritation or rash occurs, get medical attention.
P362 - Take off contaminated clothing and wash before reuse.
P301+ P312 - IF SWALLOWED: Call a physician if unwell
P330 - Rinse mouth
P304 + P341 - IF INHALED: If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing.
P342 + P311 - If experiencing respiratory symptoms, call a physician.
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 attention.
P405 - Store locked up
P273 - Avoid release to the environment
P501 - Dispose of contents and container to an approved waste disposal plant.
3. COMPOSITION / INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Iron</td>
<td>7439-89-6</td>
<td>60-100</td>
</tr>
<tr>
<td>Sodium metasilicate</td>
<td>6834-92-0</td>
<td>1-5</td>
</tr>
<tr>
<td>Manganese</td>
<td>7439-96-5</td>
<td>1-5</td>
</tr>
<tr>
<td>Nickel</td>
<td>7440-02-0</td>
<td>0.1-1</td>
</tr>
<tr>
<td>Chromium</td>
<td>7440-47-3</td>
<td>0.1-1</td>
</tr>
</tbody>
</table>

4. FIRST AID MEASURES

General advice
Do not breathe dust or fume. Show this safety data sheet to the doctor in attendance. If symptoms persist, call a physician.

Eye Contact
Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. If symptoms persist, call a physician.

Skin Contact
If skin irritation persists, call a physician. In case of contact, immediately flush skin with soap and plenty of water.

Inhalation
Remove person to fresh air. If signs/symptoms continue, get medical attention.

Ingestion
If swallowed, do not induce vomiting - seek medical advice. Rinse mouth.

Notes to physician
Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Flash Point
The product is not flammable

Suitable Extinguishing Media
Carbon dioxide (CO2). Dry chemical. Foam. Water spray.

Specific hazards arising from the chemical
Arcs and sparks can ignite combustibles and flammable products. See American National Standard Z49.1; Safety in Welding and Cutting published by The American Welding Society.

Protective Equipment and Precautions for Firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions
Wear appropriate protective clothing. Avoid creating dusty conditions. Transfer solid into a properly labeled container for re-use or disposal. If necessary, wash area with water and pick up wash water for disposal. Use personal protective equipment.

Environmental Precautions
Prevent product from contaminating soil or from entering sewage, drainage systems, and bodies of water. Do not flush into surface water or sanitary sewer system.

Methods for Containment
Pick up and arrange disposal without creating dust.

Methods for Cleaning Up
Shovel or vacuum any spilled material into a suitable container. Alloy wastes are normally collected to recover metal value.

Neutralizing Agent
Not applicable.

7. HANDLING AND STORAGE

Handling
Ensure adequate ventilation. Do not eat, drink or smoke when using this product. Avoid breathing dust.

Storage
Keep container tightly closed in a dry and well-ventilated place. Keep out of the reach of children. Store in original container. Keep containers tightly closed in a dry, cool and well-ventilated place.

Storage Temperature
Minimum: No information available  Maximum: No information available

Storage Conditions
Indoor  X  Outdoor  Heated  Refrigerated

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

<table>
<thead>
<tr>
<th>Component</th>
<th>ACGIH TLV</th>
<th>OSHA PEL</th>
<th>NIOSH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Iron</td>
<td>No data available</td>
<td>No data available</td>
<td>No data available</td>
</tr>
<tr>
<td>Sodium metasilicate</td>
<td>No data available</td>
<td>No data available</td>
<td>No data available</td>
</tr>
<tr>
<td>Manganese</td>
<td>TWA: 0.02 mg/m³</td>
<td>Ceiling: 5 mg/m³</td>
<td>IDLH: 500 mg/m³</td>
</tr>
<tr>
<td></td>
<td>TWA: 0.1 mg/m³</td>
<td></td>
<td>STEL 3 mg/m³</td>
</tr>
</tbody>
</table>
### Engineering Measures
Use enough ventilation, local exhaust at the arc, or both to keep the fumes and gases below the TLV’s in the worker’s breathing zone and in the general area. Train the worker to keep his head out of the fumes.

### Personal Protective Equipment
#### Eye/Face Protection
Wear a helmet or use face shield with filter lens of appropriate shade number (SEE ANSI/ASCZ49.1) provide protective screen and flash goggles, if necessary, to shield others. As a rule of thumb, start a shade that is too dark to see the weld zone. Then go next lighter shade which gives sufficient view of the weld zone.

#### Skin Protection
Wear fire/flame resistant/retardant clothing, Welder’s leather gloves.

#### Respiratory Protection
Use a NIOSH/MSHA approved or equivalent fume respirator or air supplied respirator when welding in confined spaces, or where local exhaust or ventilation does not keep exposure below TLV’s.

### General Hygiene Considerations
Do not eat, drink or smoke when using this product. Avoid contact with skin, eyes and clothing. Wear head and body protection which help to prevent injury from radiation, sparks, and electrical shock. See ANSI Z49.1. At minimum, this includes welder’s gloves and a protective face shield, and may include arm protectors, aprons, hat, shoulder protection as well as dark nonsynthetic clothing. Train the welder not to touch live electrical parts and to insulate himself from work and ground. Remove and wash contaminated clothing before re-use.

### 9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Physical State</th>
<th>Solid</th>
<th>Viscosity</th>
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</thead>
<tbody>
<tr>
<td>Color</td>
<td>gray</td>
<td>Odor</td>
<td>Odorless</td>
</tr>
<tr>
<td>Odor Threshold</td>
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<td>Appearance</td>
<td>Textured black paste</td>
</tr>
<tr>
<td>pH</td>
<td>Not applicable</td>
<td>Specific Gravity</td>
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</tr>
<tr>
<td>Evaporation Rate</td>
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<td>Percent Volatile (Volume)</td>
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</tr>
<tr>
<td>VOC Content (%)</td>
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<td>Vapor Pressure</td>
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</tr>
<tr>
<td>Vapor Density</td>
<td>Not applicable</td>
<td>Solubility</td>
<td>Insoluble</td>
</tr>
<tr>
<td>n-Octanol/Water Partition</td>
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<td>Melting Point/Range</td>
<td>2300 °F / 1260 °C</td>
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<tr>
<td>Decomposition Temperature</td>
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<td>Boiling Point/Range</td>
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</tr>
<tr>
<td>Flammability (solid, gas)</td>
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<td>Method</td>
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<tr>
<td>Flash Point</td>
<td>The product is not flammable</td>
<td>Autoignition Temperature</td>
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</tr>
<tr>
<td>Upper Lower</td>
<td>No data available</td>
<td>None</td>
<td>No data available</td>
</tr>
</tbody>
</table>

### 10. STABILITY AND REACTIVITY

#### Chemical Stability
Hazardous polymerization does not occur. Stable under normal conditions.

#### Conditions to Avoid
Exposure to air or moisture over prolonged periods

#### Incompatible Products
Strong acids, Incompatible with oxidizing agents.

#### Hazardous Decomposition Products
Fumes and gasses produced by welding, brazing and similar processes cannot be classified simply. The composition and quantity of both are dependent upon the metal being welded, the process, the procedures and the filler metal being used. Other conditions which also influence the composition and quantity of fumes and gases to which the worker may be exposed include: coatings on the metal being welded, the number of welders and the volume of the work space, the quality and amount of ventilation used, the position of the welder’s head in relation to the fume plume, as well as the presence of contaminants in the atmosphere when the filler metal is consumed. The fume and gas decomposition products generated are different in percent and form the product ingredients listed in Section III. The products formed in normal operation include those originating from the volatilization, reaction and oxidation of the filler metal, the metal being welded, the coatings, etc. as noted above. One recommended way to determine the composition and quality of fumes and gases to which workers are exposed is to take an air sample inside the welder’s helmet if worn or in the workers breathing zone. See ANSI/AWS F1.1 "Method For Sampling
11. TOXICOLOGICAL INFORMATION

Product Information

The following values are calculated based on chapter 3.1 of the GHS document (Rev. 3, 2009):

- Oral LD50: No information available
- Dermal LD50: No information available
- Inhalation LC50:
  - Gas: No information available
  - Mist: No information available
  - Vapor: No information available

Principle Route of Exposure: Inhalation
Primary Routes of Entry: Inhalation

Acute Effects

- Eyes: Welding arc may damage eyes. Causes eye irritation.
- Skin: Repeated or prolonged skin contact may cause allergic reactions with susceptible persons. Causes skin irritation. May cause allergic skin reaction.
- Inhalation: Excessive inhalation of iron oxides fumes or dust can lead to irritation of the respiratory tract. Welding fumes may result in discomfort such as dizziness, nausea, or dryness or irritation of nose, throat, or eyes. Fumes can aggravate asthma, bronchial conditions, or allergies. Individuals with allergies or impaired respiratory function may have symptoms worsened by exposure to welding fumes. Inhalation may cause central nervous system effects. Symptoms and signs include headache, dizziness, fatigue, muscular weakness, drowsiness and in extreme cases, loss of consciousness.

Ingestion: Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Chronic Toxicity

Harmful if inhaled and may cause delayed lung injury. Inhalation of manganese fumes may affect the central nervous system, may cause spastic gait, drowsiness, paralysis and other neurological problems with symptoms including weakness and tremors resembling Parkinson’s disease. Behavioral changes and changes in handwriting may also appear. Long term overexposure to iron fumes may lead to siderosis (iron deposits in the lung) and is believed by investigators to affect pulmonary function. Lungs will clear in time when exposure to iron and its components cease. Prolonged exposure may cause chronic effects. Prolonged exposure to elevated noise levels during operations may affect hearing.

Target Organ Effects: Liver, kidney, respiratory system, central nervous system, blood.
Aggravated Medical Conditions: Pre-existing liver and kidney diseases, pre-existing respiratory and skin conditions such as asthma, emphysema, and dermatitis, central nervous system, allergies, kidney disorders, liver disorders.

Component Information

Acute Toxicity

<table>
<thead>
<tr>
<th>Component</th>
<th>LD50 Oral</th>
<th>LD50 Dermal</th>
<th>LC50 Inhalation</th>
<th>Draize Test</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Iron</td>
<td>984 mg/kg (Rat)</td>
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<tr>
<td>Sodium metasilicate</td>
<td>600 mg/kg (Rat)</td>
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<td>no data available</td>
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<td>no data available</td>
<td>no data available</td>
<td>no data available</td>
<td>no data available</td>
</tr>
<tr>
<td>Nickel</td>
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<td>Chromium</td>
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<td>no data available</td>
<td>no data available</td>
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</table>

Chronic Toxicity

<table>
<thead>
<tr>
<th>Component</th>
<th>Mutagenicity</th>
<th>Sensitization</th>
<th>Developmental Toxicity</th>
<th>Reproductive Toxicity</th>
<th>Target Organ Effects</th>
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</thead>
<tbody>
<tr>
<td>Iron</td>
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<td>no data available</td>
<td>no data available</td>
<td>no data available</td>
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<tr>
<td>Sodium metasilicate</td>
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<td>no data available</td>
<td>no data available</td>
<td>no data available</td>
<td>no data available</td>
</tr>
<tr>
<td>Manganese</td>
<td>no data available</td>
<td>no data available</td>
<td>no data available</td>
<td>no data available</td>
<td>CNS, respiratory system, blood, kidneys</td>
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<td>Nickel</td>
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<td>no data available</td>
<td>no data available</td>
<td>no data available</td>
<td>nasal cavities, lungs, skin (lung and nasal cancer), lungs, skin, nasal cavities, skin (lung and nasal cancer)</td>
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<tr>
<td>Chromium</td>
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<td>no data available</td>
<td>no data available</td>
<td>no data available</td>
<td>eyes, respiratory system, skin</td>
</tr>
</tbody>
</table>

Carcinogenicity

The table below indicates whether each agency has listed any ingredient as a carcinogen.

<table>
<thead>
<tr>
<th>Component</th>
<th>ACGIH</th>
<th>IARC</th>
<th>NTP</th>
<th>OSHA</th>
<th>Other</th>
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<tbody>
<tr>
<td>Iron</td>
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<td>not applicable</td>
<td>not applicable</td>
<td>not applicable</td>
<td>not applicable</td>
</tr>
<tr>
<td>Sodium metasilicate</td>
<td>not applicable</td>
<td>not applicable</td>
<td>not applicable</td>
<td>not applicable</td>
<td>not applicable</td>
</tr>
<tr>
<td>Manganese</td>
<td>not applicable</td>
<td>Group 1</td>
<td>not applicable</td>
<td>not applicable</td>
<td>not applicable</td>
</tr>
<tr>
<td>Nickel</td>
<td>not applicable</td>
<td>Group 1</td>
<td>Known</td>
<td>Reasonably Anticipated</td>
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<tr>
<td>Chromium</td>
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<td>not applicable</td>
<td>not applicable</td>
<td>not applicable</td>
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12. ECOLOGICAL INFORMATION

Product Information
No information available.

Component Information

<table>
<thead>
<tr>
<th>Component</th>
<th>Toxicity to Algae</th>
<th>Toxicity to Fish</th>
<th>Microtox</th>
<th>Water Flea</th>
<th>log Pow</th>
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</thead>
<tbody>
<tr>
<td>Iron</td>
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<td>no data available</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>LC50 = 0.56 mg/L Cyprinus carpio 96 h</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sodium metasilicate</td>
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<td>LC50 = 210 mg/L Brachydanio rerio 96 h</td>
<td>no data available</td>
<td>EC50= 216 mg/L 96 h</td>
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<tr>
<td>Manganese</td>
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<td>no data available</td>
<td>no data available</td>
<td>no data available</td>
<td>N/A</td>
</tr>
<tr>
<td>Nickel</td>
<td>EC50 = 0.18 mg/L Pseudokirchneriella subcapitata 72 h EC50 = 0.174 - 0.311 mg/L Pseudokirchneriella subcapitata 96 h</td>
<td>LC50 &gt; 100 mg/L Brachydanio rerio 96 h LC50 = 1.3 mg/L Cyprinus carpio 96 h LC50 = 10.4 mg/L Cyprinus carpio 96 h</td>
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<tr>
<td>Chromium</td>
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<td>no data available</td>
<td>no data available</td>
<td>no data available</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Persistence and Degradability
No information available.

Bioaccumulation
No information available.

Mobility
No information available.

13. DISPOSAL CONSIDERATIONS

Product Disposal
Dispose of in accordance with local regulations.

Container Disposal
Empty containers should be taken for local recycling, recovery, or waste disposal.

14. TRANSPORT INFORMATION

DOT
Not regulated

TDG
Not regulated

ICAO
Not regulated

IATA
Not regulated

IMDG/IMO
Not regulated

15. REGULATORY INFORMATION

Inventories
TSCA Complies
DSL Complies

U.S. Federal Regulations
SARA 313
Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No</th>
<th>Weight %</th>
<th>SARA 313 - Threshold Values</th>
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<tbody>
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<td>Manganese</td>
<td>7439-96-5</td>
<td>1-5</td>
<td>1.0</td>
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<tr>
<td>Nickel</td>
<td>7440-02-0</td>
<td>0.1-1</td>
<td>0.1</td>
</tr>
<tr>
<td>Chromium</td>
<td>7440-47-3</td>
<td>0.1-1</td>
<td>1.0</td>
</tr>
</tbody>
</table>

SARA 311/312 Hazardous Categorization

<table>
<thead>
<tr>
<th>Acute Health Hazard</th>
<th>Chronic Health Hazard</th>
<th>Fire Hazard</th>
<th>Sudden Release of Pressure Hazard</th>
<th>Reactive Hazard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
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</table>

CERCLA

<table>
<thead>
<tr>
<th>Component</th>
<th>Hazardous Substances RQs</th>
<th>CERCLA EHS RQs</th>
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</thead>
<tbody>
<tr>
<td>Iron</td>
<td>Not applicable</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Sodium metasilicate</td>
<td>Not applicable</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Manganese</td>
<td>Not applicable</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Nickel</td>
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<td>Not applicable</td>
</tr>
<tr>
<td>Chromium</td>
<td>10 lb</td>
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</table>
16. OTHER INFORMATION

Prepared By        Linda Chow
Supercedes Date    08/01/2012
Issuing Date       10/30/2013
Reason for Revision No information available.
Glossary           No information available.
List of References  No information available.

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