

## Safety Data Sheet

### 1. PRODUCT AND COMPANY IDENTIFICATION: PRODUCT NAME: ER70S-2

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### 2. HAZARD IDENTIFICATION:

The ingredients are components of this product and hardly harmful to users because of the processed a series of progresses  
This section covers the materials and the hazard .

#### 2-1. Classification of hazard

Specific target organ toxicity, repeated exposure : Category 2

#### 2-2. Warning signals including precaution.

- Pictograph



- A signal : warning
- Health hazard statements
  - (H373) May cause damage to organs (state all organs affected, if known) through prolonged or repeated exposure  
(state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard).
  - Prevention precautionary statements
    - (P260) Do not breathe dust/fume/gas/mist/vapours/spray.
    - Response precautionary statements
      - (P314) Get medical advice/attention if you feel unwell.
    - Disposal precautionary statements
      - (P501) Dispose of contents and container in accordance with local and national regulations.

#### 2-3. Other hazards

No data available

### 3. COMPOSITION / INFORMATION ON INGREDIENTS:

CAS #	Component		Contents (weight %)
7439-89-6	Iron	231-096-4	Rem
7439-96-5	Manganese (Mn)	231-105-1	0.5-3.0
7440-21-3	Silicon (Si)	231-130-8	0.2-1.5
7440-50-8	Copper (Cu)	231-159-6	0.05-1.0

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

#### **First Aid: Eyes**

Lift eyelids and flush immediately with flooding amounts of water for at least 15 minutes. Do not allow the victim to rub his/her eyes or keep them shut. Consult a physician or ophthalmologist if all material cannot be removed or if there is continuing irritation.

#### **First Aid: Skin**

Remove clothing around affected area. Rinse away loose material and wash affected area with soap and water. If there is a severe skin reaction or reddened or blistered skin, consult a physician.

#### **First Aid: Ingestion**

Never give anything by mouth to an unconscious or convulsing person. Contact a poison control center with information from this SDS and the Technical Data Sheet on the composition of the material ingested. Unless the poison control center advises otherwise, give the person one or two glasses of water, then induce vomiting. After first aid, have the person see a physician for follow up care.

#### **First Aid: Inhalation**

Move the person to fresh air and support breathing as required. Consult a physician if victim has continued difficulty breathing.

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

#### **General Fire Hazards**

See Section 9 for Flammability Properties.  
Powder may burn. Dust is an explosion hazard.

#### **Hazardous Combustion Products**

Toxic metal oxides, carbon and nitrogen oxides may be produced during a fire involving metal alloys. Alloys with nickel may also produce toxic nickel carbonyl.

#### **Extinguishing Media**

Use dry sand, dry dolomite, or dry graphite powder or other dry chemical extinguishing agent formulated for metal fires.

#### **Unsuitable Extinguishing Media**

Do not use water or halon.

#### **Fire Fighting Equipment/Instructions**

Firefighters should wear full protective gear

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

#### **Recovery and Neutralization**

Collect spilled material and place in sealed containers for reclamation or disposal.

#### **Materials and Methods for Clean-Up**

Use clean up measures that minimize dust. Avoid inhalation of dust. Remove sources of heat or ignition as dust

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clouds can burn or explode.

### Emergency Measures

Isolate area. Keep unnecessary personnel away.

### Personal Precautions and Protective Equipment

Wear appropriate protective clothing and respiratory protection for the situation.

### Environmental Precautions

None

### Prevention of Secondary Hazards

None

## 7. HANDLING AND STORAGE:

### Handling Procedures

Use local exhaust ventilation to protect against dust and fume inhalation. If workers are exposed to dust provide appropriate respiratory, eye, and skin protection. An eye wash station should be readily available to areas of use.

### Storage Procedures

Store in a closed container when possible to prevent accidental dust generation and to prevent possible product contamination. Protect containers from physical damage. Guard against dust accumulation and dust becoming airborne.

### Incompatibilities

Keep dry and isolated from acids, caustics, halogenated compounds, and oxidizers. Do not store near combustible materials.

## 8. EXPOSURE CONTROLS/ PERSONAL PROTECTION:

### Component Exposure Limits

Ingredients	CAS No.	EC No.	Occupation safety and health acts (mg/m <sup>3</sup> )	OSHA-PEL (mg/m <sup>3</sup> )	ACGIH-TLV (mg/m <sup>3</sup> )
Iron	7439-89-6	231-096-4	5.0	15.0	10.0
Manganese(as Mn)	7439-96-5	231-105-1	5.0	5.0	0.2
Silicon(as Si)	7440-21-3	231-130-8	10.0	15.0	10.0
Copper	7440-50-8	215-159-6	0.1	0.1	0.2

### Engineering Measures

Where feasible, enclose processes to prevent dust dispersion into the work area. Provide local exhaust when possible, and general ventilation as necessary, to keep airborne concentrations below exposure limits and as low as possible.

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### **Personal Protective Equipment: Respiratory**

If airborne concentrations are above the applicable exposure limits, use NIOSH approved respiratory protection.

### **Personal Protective Equipment: Hands**

Use impervious gloves such as neoprene, nitrile, or rubber for hand protection.

### **Personal Protective Equipment: Eyes**

Wear safety glasses with side shields and/or goggles as necessary to prevent dust from entering eyes.

### **Personal Protective Equipment: Skin and Body**

Use body protection appropriate for task.

## **9. PHYSICAL AND CHEMICAL PROPERTIES:**

- 9-1. Physical State: Solid
- 9-2. Odor : Odorless
- 9-3. Odor threshold : Not applicable
- 9-4. pH Value : Not applicable
- 9-5. Melting point : Not applicable
- 9-6. early boiling point : Not applicable
- 9-7. Flash point : Not applicable
- 9-8. Evaporation rate : Not applicable
- 9-9. Flammability : Not applicable
- 9-10. Explosion limit - lower : Not applicable  
Explosion limit - upper : Not applicable
- 9-11. Vapor pressure : Not applicable
- 9-12. Solubility in water : Not applicable
- 9-13. Vapor density : Not applicable
- 9-14. Density : 7~8.
- 9-15. Partition coefficient N-octanol / water : Not applicable
- 9-16. Spontaneous combustion temperature : Not applicable
- 9-17. Dcomposition temperature : Not applicable
- 9-18. Viscosity : Not applicable
- 9-19. Molecular weight : Not applicable

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## **10. STABILITY AND REACTIVITY:**

### **Chemical Stability**

This is a stable material.

### **Hazardous Reaction Potential**

Will not occur.

### **Conditions to Avoid**

Contamination from other materials.

### **Incompatible Products**

Reacts with strong acids and caustics to form flammable and explosive hydrogen gas. Contact with sulfur may

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cause evolution of heat. Contact with halogenated compounds and oxidizers may produce violent reactions and fires.

### Hazardous Decomposition Products

Toxic metal oxides and carbon and nitrogen oxides may be produced during a fire involving metal alloys. Alloys with nickel may also produce poisonous nickel carbonyl.

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### 11. TOXICOLOGICAL INFORMATION:

Welding fume consist of complex materials and represent iron oxide , manganese oxide and fluorine oxide. follow section is a health hazard data.

#### 11.1 Iron oxide

- Acute poisonous character : relatively non-poison at intake
- A generation of cancer : no data
- Health influence : (expose a eye and a skin) acute exposure – occur a physical stimulation.

Chronic exposure – no data.

(Ingestion) acute exposure - occur a physical stimulation.

Chronic exposure – occur a iron-pneumoconiosis in case that a welding fume is piled in the lung.

#### 11.2 Manganese oxide( manganese )

- Acute poisonous character : it is rare for worker to occur an acute poison.
- A generation of cancer : nothing
- Health influence : (Ingestion ) acute exposure – May occur a acute pneumonia in case that a welding fume of manganese steel is breathed in.

May occur a metal fume fever.

Chronic exposure - occur a nervous disease by reason of chronic poison when welded in a limited place.

※ Metal fume fever - metal fume fever which have a symptoms like a cold is occurred when a worker ingest a corpuscle of metal oxide, below 1.5 micro(generally 0.02~0.05 micro)

First symptoms occur after 4~12h and are thirst, sweat, a metal smell or a stink in mouth.

Other symptoms are a cough, a stimulate, a dry of mucous membrane, a languor and a discomfort. Occur a fever, a cold fit, a muscular pain and headache.

Occur a vomiting, a excess mental activity and have loose bowels.

Tolerance about a fume directly occur and disappear soon. Every symptoms is lessened less than 24~36h.

Chronic exposure – chronic metal fume fever don't occur but symptoms occur repeatedly and disappear within one-two days due to have a tolerance.

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### 12. ECOLOGICAL INFORMATION:

12-1. Toxicity : No data available

12-2. Persistence–degradability : No data available

12-3. Bio accumulative potential : No data available

12-4. Mobility in soil : No data available

12-5. Results of PBT and vPvB assessment : No data available

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### **13: Disposal Considerations**

#### **Waste Disposal Instructions**

See Section 7 for Handling Procedures. See Section 8 for Personal Protective Equipment recommendations.

#### **Disposal of Contaminated Containers or Packaging**

Dispose of contents/container in accordance with local/regional/national/international regulations

### **14: Transportation Information**

14.1 Grade classification : No data available

14.2 Cautions of a transfer – Don't give a impact to products not to break. Observe the safety driving law.

14.3 Prepare a waterproof and a damp proof of products.

### **15: Regulatory Information**

Observing the article 39 ( express of hazardous materials ) of law of industry safety & health and the article 31 of this same law, express the precautionary label on the product

### **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 Material 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