

ELECTRIC FURNACE EMISSION CONTROL DUST/SLUDGE HW K061

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Date of issue: 04/23/2015 Version: 1.0

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product name : ELECTRIC FURNACE EMISSION CONTROL DUST/SLUDGE HW K061

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : Multiple Industrial & Commercial Uses

1.3. Details of the supplier of the safety data sheet

Republic Steel
2633 Eighth Street NE
Canton, Ohio 44704
Fax 330-438-5423
Phone 330-438-5466

1.4. Emergency telephone number

Emergency number : 24 hr. Emergency Contact : CHEMTREC
U.S.A. - (800) 424-9300
International - (703) 527-3887 (collect)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (GHS-US)

Skin Corr. 1A H314

2.2. Label elements

GHS-US labeling

Hazard pictograms (GHS-US) :



GHS05

Signal word (GHS-US) : Danger

Hazard statements (GHS-US) : H314 - Causes severe skin burns and eye damage

Precautionary statements (GHS-US) : P260 - Do not breathe dust/fume
P264 - Wash all contacted areas thoroughly after handling
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P301+P330+P331 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting
P303+P361+P353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
P304+P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310 - Immediately call a poison center or doctor/physician
P363 - Wash contaminated clothing before reuse

2.3. Other hazards

Excessive dust buildup may present a dust explosion hazard.

2.4. Unknown acute toxicity (GHS-US)

None of the ingredients are of unknown toxicity.

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable – this product is a mixture.

3.2. Mixture

| Name | Product identifier | % | Classification (GHS-US) |
|--|--------------------|------|-------------------------|
| Iron oxide (Fe ₂ O ₃) | (CAS No) 1309-37-1 | 31.2 | Not classified |

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| Name | Product identifier | % | Classification (GHS-US) |
|-----------------------|--------------------|------|--|
| Zinc oxide | (CAS No) 1314-13-2 | 23.6 | Not classified |
| Calcium oxide | (CAS No) 1305-78-8 | 5.57 | Acute Tox. 4 (Oral), H302 Skin Corr. 1A, H314 |
| Magnesium oxide (MgO) | (CAS No) 1309-48-4 | 4.33 | Not classified |
| Silicon | (CAS No) 7440-21-3 | 3.39 | Not classified |
| Manganese | (CAS No) 7439-96-5 | 2.4 | Not classified |
| Carbon | (CAS No) 7440-44-0 | 1.89 | Not classified |

SECTION 4: First aid measures

4.1. Description of first aid measures

- First-aid measures general : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).
- First-aid measures after inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a poison center or doctor/physician.
- First-aid measures after skin contact : Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Immediately call a poison center or doctor/physician.
- First-aid measures after eye contact : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center or doctor/physician.
- First-aid measures after ingestion : Rinse mouth. Do NOT induce vomiting. Immediately call a poison center or doctor/physician.

4.2. Most important symptoms and effects, both acute and delayed

- Symptoms/injuries : Causes severe skin burns and eye damage.

4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

- Suitable extinguishing media : Foam. Dry powder. Carbon dioxide. Water spray. Sand.
- Unsuitable extinguishing media : Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

- Reactivity : Thermal decomposition generates : Corrosive vapors.

5.3. Advice for firefighters

- Firefighting instructions : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment.
- Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

- Emergency procedures : Evacuate unnecessary personnel.

6.1.2. For emergency responders

- Protective equipment : Equip cleanup crew with proper protection.
- Emergency procedures : Ventilate area.

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

- Methods for cleaning up : On land, sweep or shovel into suitable containers. Minimize generation of dust. Store away from other materials. Cleanup operations should follow hazardous waste format.

6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Precautions for safe handling : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Do not breathe dust/fume. Avoid contact during pregnancy/while nursing.

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Hygiene measures : Wash hands and other exposed areas thoroughly after handling.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep only in the original container in a cool, well ventilated place away from : Keep container closed when not in use.

Incompatible products : Strong bases. Strong acids.

Incompatible materials : Sources of ignition. Direct sunlight.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

| Iron oxide (Fe ₂ O ₃) (1309-37-1) | | |
|--|-------------------------------------|---|
| USA ACGIH | ACGIH TWA (mg/m ³) | 5 mg/m ³ (respirable fraction) |
| USA OSHA | OSHA PEL (TWA) (mg/m ³) | 10 mg/m ³ (fume) 15 mg/m ³ (total dust) 5 mg/m ³ (respirable fraction) |

| Zinc oxide (1314-13-2) | | |
|------------------------|-------------------------------------|--|
| USA ACGIH | ACGIH TWA (mg/m ³) | 2 mg/m ³ (respirable fraction) |
| USA ACGIH | ACGIH STEL (mg/m ³) | 10 mg/m ³ (respirable fraction) |
| USA OSHA | OSHA PEL (TWA) (mg/m ³) | 5 mg/m ³ (fume) 15 mg/m ³ (total dust) 5 mg/m ³ (respirable fraction) |

| Calcium oxide (1305-78-8) | | |
|---------------------------|-------------------------------------|---------------------|
| USA ACGIH | ACGIH TWA (mg/m ³) | 2 mg/m ³ |
| USA OSHA | OSHA PEL (TWA) (mg/m ³) | 5 mg/m ³ |

| Silicon (7440-21-3) | | |
|---------------------|-------------------------------------|---------------------|
| USA OSHA | OSHA PEL (TWA) (mg/m ³) | 5 mg/m ³ |

| Magnesium oxide (MgO) (1309-48-4) | | |
|-----------------------------------|-------------------------------------|----------------------|
| USA ACGIH | ACGIH TWA (mg/m ³) | 10 mg/m ³ |
| USA OSHA | OSHA PEL (TWA) (mg/m ³) | 15 mg/m ³ |

| Manganese (7439-96-5) | | |
|-----------------------|---|-----------------------|
| USA ACGIH | ACGIH TWA (mg/m ³) | 0.1 mg/m ³ |
| USA OSHA | OSHA PEL (Ceiling) (mg/m ³) | 5 mg/m ³ |

8.2. Exposure controls

Personal protective equipment : Avoid all unnecessary exposure.

Hand protection : Wear protective gloves.

Eye protection : Chemical goggles or face shield.

Skin and body protection : Wear suitable protective clothing.

Respiratory protection : If processing of this product generates particulates, local and general ventilation may be necessary to control employee exposures to within applicable limits. If the exposure limits indicated are exceeded, NIOSH approved respirators for protection against dust and/or fume should be worn in accordance with 29 CFR 1910.134.

Other information : Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Solid

Appearance : Grey-black particulate

Color : Grey-black

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| | |
|---|---------------------|
| Odor | : Odorless. |
| Odor threshold | : No data available |
| pH | : No data available |
| Relative evaporation rate (butyl acetate=1) | : No data available |
| Melting point | : No data available |
| Freezing point | : No data available |
| Boiling point | : No data available |
| Flash point | : No data available |
| Auto-ignition temperature | : No data available |
| Decomposition temperature | : No data available |
| Flammability (solid, gas) | : No data available |
| Vapor pressure | : No data available |
| Relative vapor density at 20 °C | : No data available |
| Relative density | : 7 |
| Solubility | : No data available |
| Log Pow | : No data available |
| Log Kow | : No data available |
| Viscosity, kinematic | : No data available |
| Viscosity, dynamic | : No data available |
| Explosive properties | : No data available |
| Oxidizing properties | : No data available |
| Explosive limits | : No data available |

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

Thermal decomposition generates : Corrosive vapors.

10.2. Chemical stability

Stable

10.3. Possibility of hazardous reactions

Not established.

10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures.

10.5. Incompatible materials

Strong acids. Strong bases.

10.6. Hazardous decomposition products

Fume. Carbon monoxide. Carbon dioxide. Thermal decomposition generates : Corrosive vapors.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

| | |
|---------------------------------------|---------------|
| Iron oxide (Fe2O3) (1309-37-1) | |
| LD50 oral rat | > 10000 mg/kg |
| Zinc oxide (1314-13-2) | |
| LD50 oral rat | > 5000 mg/kg |
| Calcium oxide (1305-78-8) | |
| LD50 oral rat | 500 mg/kg |
| Carbon (7440-44-0) | |
| LD50 oral rat | > 10000 mg/kg |

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| | |
|-----------------------------------|--|
| Skin corrosion/irritation | : Causes severe skin burns and eye damage. |
| Serious eye damage/irritation | : Not classified |
| Respiratory or skin sensitization | : Not classified |
| Germ cell mutagenicity | : Not classified |
| Carcinogenicity | : Not classified |

Iron oxide (Fe₂O₃) (1309-37-1)

| | |
|------------|----------------------|
| IARC group | 3 - Not classifiable |
|------------|----------------------|

| | |
|--|------------------|
| Reproductive toxicity | : Not classified |
| Specific target organ toxicity (single exposure) | : Not classified |

| | |
|--|------------------|
| Specific target organ toxicity (repeated exposure) | : Not classified |
|--|------------------|

| | |
|---|--|
| Aspiration hazard | : Not classified |
| Potential adverse human health effects and symptoms | : No additional information available. |

SECTION 12: Ecological information

12.1. Toxicity

Calcium oxide (1305-78-8)

| | |
|-------------|---|
| LC50 fish 1 | 1070 mg/l (Exposure time: 96 h - Species: Cyprinus carpio [static]) |
|-------------|---|

12.2. Persistence and degradability

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| | |
|-------------------------------|------------------|
| Persistence and degradability | Not established. |
|-------------------------------|------------------|

12.3. Bioaccumulative potential

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| | |
|---------------------------|------------------|
| Bioaccumulative potential | Not established. |
|---------------------------|------------------|

Calcium oxide (1305-78-8)

| | |
|------------|----------------------|
| BCF fish 1 | (no bioaccumulation) |
|------------|----------------------|

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

| | |
|-------------------|-------------------------------------|
| Other information | : Avoid release to the environment. |
|-------------------|-------------------------------------|

SECTION 13: Disposal considerations

13.1. Waste treatment methods

| | |
|--------------------------------|---|
| Waste disposal recommendations | : Dispose in a safe manner in accordance with local, state and federal regulations. |
| Ecology - waste materials | : Avoid release to the environment. |

SECTION 14: Transport information

In accordance with DOT

ADR

| | |
|-------------------------------------|---|
| No additional information available | : |
|-------------------------------------|---|

Transport by sea

No additional information available

Air transport

No additional information available

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SECTION 15: Regulatory information

15.1. US Federal regulations

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| | |
|-------------------------------------|--|
| SARA Section 311/312 Hazard Classes | Immediate (acute) health hazard Delayed (chronic) health hazard |
|-------------------------------------|--|

Iron oxide (Fe₂O₃) (1309-37-1)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

Zinc oxide (1314-13-2)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

Calcium oxide (1305-78-8)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

Silicon (7440-21-3)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

Magnesium oxide (MgO) (1309-48-4)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

Manganese (7439-96-5)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

Listed on United States SARA Section 313

| | |
|---------------------------------------|-----------------|
| SARA Section 313 - Emission Reporting | 1.0% de minimis |
|---------------------------------------|-----------------|

Carbon (7440-44-0)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2. International regulations

CANADA

Iron oxide (Fe₂O₃) (1309-37-1)

Listed on the Canadian DSL (Domestic Substances List)

| | |
|----------------------|---|
| WHMIS Classification | Uncontrolled product according to WHMIS classification criteria |
|----------------------|---|

Zinc oxide (1314-13-2)

Listed on the Canadian DSL (Domestic Substances List)

| | |
|----------------------|---|
| WHMIS Classification | Uncontrolled product according to WHMIS classification criteria |
|----------------------|---|

Calcium oxide (1305-78-8)

Listed on the Canadian DSL (Domestic Substances List)

| | |
|----------------------|------------------------------|
| WHMIS Classification | Class E - Corrosive Material |
|----------------------|------------------------------|

Silicon (7440-21-3)

Listed on the Canadian DSL (Domestic Substances List)

| | |
|----------------------|--------------------------------------|
| WHMIS Classification | Class B Division 4 - Flammable Solid |
|----------------------|--------------------------------------|

Magnesium oxide (MgO) (1309-48-4)

Listed on the Canadian DSL (Domestic Substances List)

| | |
|----------------------|---|
| WHMIS Classification | Uncontrolled product according to WHMIS classification criteria |
|----------------------|---|

Manganese (7439-96-5)

Listed on the Canadian DSL (Domestic Substances List)

| | |
|----------------------|--|
| WHMIS Classification | Class D Division 2 Subdivision A - Very toxic material causing other toxic effects |
|----------------------|--|

Carbon (7440-44-0)

Listed on the Canadian DSL (Domestic Substances List)

| | |
|----------------------|---|
| WHMIS Classification | Uncontrolled product according to WHMIS classification criteria |
|----------------------|---|

EU-Regulations

Iron oxide (Fe₂O₃) (1309-37-1)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

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Zinc oxide (1314-13-2)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

Calcium oxide (1305-78-8)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

Silicon (7440-21-3)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

Magnesium oxide (MgO) (1309-48-4)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

Manganese (7439-96-5)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

Carbon (7440-44-0)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

Classification according to Regulation (EC) No. 1272/2008 [CLP]

No additional information available

Classification according to Directive 67/548/EEC [DSD] or 1999/45/EC [DPD]

No additional information available

15.2.2. National regulations

Iron oxide (Fe₂O₃) (1309-37-1)

Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
Listed on the Korean ECL (Existing Chemicals List)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
Listed on the Canadian IDL (Ingredient Disclosure List)

Zinc oxide (1314-13-2)

Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
Listed on the Korean ECL (Existing Chemicals List)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
Listed on the Canadian IDL (Ingredient Disclosure List)

Calcium oxide (1305-78-8)

Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
Listed on the Korean ECL (Existing Chemicals List)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
Listed on the Canadian IDL (Ingredient Disclosure List)

Silicon (7440-21-3)

Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on the Korean ECL (Existing Chemicals List)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)

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Magnesium oxide (MgO) (1309-48-4)

Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
Listed on the Korean ECL (Existing Chemicals List)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
Listed on the Canadian IDL (Ingredient Disclosure List)

Manganese (7439-96-5)

Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on the Korean ECL (Existing Chemicals List)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
Japanese Pollutant Release and Transfer Register Law (PRTR Law)
Listed on the Canadian IDL (Ingredient Disclosure List)

Carbon (7440-44-0)

Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on the Korean ECL (Existing Chemicals List)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)

15.3. US State regulations

No additional information available

SECTION 16: Other information

Other information

: Steel products may be coated with petroleum oils to meet customer specifications. Information relative to specific coatings may be obtained from Republic Steel. Republic's steel products undergo close scrutiny in the steel manufacturing process to ensure they are free of any radioactive contamination. First, our purchasing specifications prohibit any foreign, radioactive articles and if any are detected at our truck/rail gate detectors, they are returned to the scrap supplier in accord with DOT requirements.

Full text of H-phrases: see section 16:

| | |
|---------------------|---|
| Acute Tox. 4 (Oral) | Acute toxicity (oral) Category 4 |
| Skin Corr. 1A | Skin corrosion/irritation Category 1A |
| H302 | Harmful if swallowed |
| H314 | Causes severe skin burns and eye damage |

SDS US (GHS HazCom 2012)

The information in this SDS was obtained from sources we believe are reliable. However, the information is provided without any representation or warranty, express or implied, regarding the accuracy or correctness. The conditions or methods of handling, storage, use and disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use, or disposal of the product.