

### SECTION 1: Identification

#### 1.1. Identification

Product form : Mixture  
Product name : REF Ram 850HS FG  
CAS-No. : Mixture  
Product code : 2378  
Other means of identification : Plastic/Ramming Mix Refractory

#### 1.2. Recommended use and restrictions on use

Use of the substance/mixture : Refractory  
Recommended use : Industrial use

#### 1.3. Supplier

Resco Products, Inc.  
One Robinson Plaza, Suite 300  
6600 Steubenville Pike  
Pittsburgh, PA, 15205  
United States  
T 412-494-4491  
[SDS@RescoProducts.com](mailto:SDS@RescoProducts.com) - [WWW.RescoProducts.com](http://WWW.RescoProducts.com)

#### 1.4. Emergency telephone number

Emergency number : EMERGENCY ONLY (CHEMTREC) USA & Canada 1-800-424-9300  
Outside USA & Canada +1 703-741-5970

### SECTION 2: Hazard(s) identification

#### 2.1. Classification of the substance or mixture

##### GHS US classification

Skin corrosion/irritation Category 2	H315	Causes skin irritation
Serious eye damage/eye irritation Category 2B	H320	Causes eye irritation
Carcinogenicity Category 1A	H350	After drying May cause cancer (Inhalation)

Full text of H statements : see section 16

#### 2.2. GHS Label elements, including precautionary statements

##### GHS US labeling

Hazard pictograms (GHS US) :



Signal word (GHS US) : Danger  
Hazard statements (GHS US) : H315 - Causes skin irritation  
H320 - Causes eye irritation  
H350 - After drying May cause cancer (Inhalation)  
Precautionary statements (GHS US) : P280 - Wear eye protection, protective gloves, Dust respirator, Dust when sawing or tear out.  
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P332+P313 - If skin irritation occurs: Get medical advice/attention.  
P337+P313 - If eye irritation persists: Get medical advice/attention.  
P260 - Do not breathe dust, Dust when sawing or tear out.

#### 2.3. Other hazards which do not result in classification

No additional information available

#### 2.4. Unknown acute toxicity (GHS US)

No additional information available

### SECTION 3: Composition/Information on ingredients

#### 3.1. Substances

Not applicable

#### 3.2. Mixtures

Name	Product identifier	%	GHS US classification
aluminium oxide, non-fibrous	CAS-No.: 1344-28-1	50 – 75	Not classified
phosphoric acid, conc=75%, aqueous solution	CAS-No.: 7664-38-2	5 – 10	Skin Corr. 1B, H314
quartz	CAS-No.: 14808-60-7	1 – 5	Carc. 1A, H350
cristobalite	CAS-No.: 14464-46-1	0.1 – 0.5	Carc. 1A, H350

Full text of hazard classes and H-statements : see section 16

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### 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	: Allow affected person to breathe fresh air. Allow the victim to rest.
First-aid measures after skin contact	: Gently wash with plenty of soap and water.
First-aid measures after eye contact	: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
First-aid measures after ingestion	: Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention.

#### 4.2. Most important symptoms and effects (acute and delayed)

Potential Adverse human health effects and symptoms	: Dust on tear out. Danger of serious damage to health by prolonged exposure through inhalation.
Symptoms/effects after inhalation	: After drying or heating. Danger of serious damage to health by prolonged exposure through inhalation. May cause cancer by inhalation.
Symptoms/effects after skin contact	: Causes skin irritation.
Symptoms/effects after eye contact	: Causes eye irritation.

#### 4.3. Immediate medical attention and special treatment, if necessary

No additional information available

### SECTION 5: Fire-fighting measures

#### 5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media	: Use extinguishing media appropriate for surrounding fire.
Unsuitable extinguishing media	: In case of fire, all extinguishing media allowed.

#### 5.2. Specific hazards arising from the chemical

Fire hazard	: Not flammable.
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#### 5.3. Special protective equipment and precautions for fire-fighters

Firefighting instructions	: Fight fire with normal precautions from a reasonable distance. 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	: Avoid contact with skin and eyes.
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##### 6.1.2. For emergency responders

Protective equipment	: Equip cleanup crew with proper protection.
Emergency procedures	: On land, sweep or shovel into suitable containers.

#### 6.2. Environmental precautions

Prevent entry to sewers and public waters.

#### 6.3. Methods and material for containment and cleaning up

Methods for cleaning up	: On land, sweep or shovel into suitable containers.
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#### 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	: Do not handle until all safety precautions have been read and understood. Avoid contact with skin and eyes. After drying Do not breathe dust.
Hygiene measures	: Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

#### 7.2. Conditions for safe storage, including any incompatibilities

Storage conditions	: Store this product in a dry location where it can be protected from the elements.
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### SECTION 8: Exposure controls/personal protection

#### 8.1. Control parameters

##### REF Ram 850HS FG (Mixture)

No additional information available

##### cristobalite (14464-46-1)

##### USA - ACGIH - Occupational Exposure Limits

ACGIH OEL TWA	0.025 mg/m <sup>3</sup> respirable dust
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<b>cristobalite (14464-46-1)</b>	
<b>USA - OSHA - Occupational Exposure Limits</b>	
OSHA PEL (TWA) [1]	0.05 mg/m <sup>3</sup> respirable dust
<b>aluminium oxide, non-fibrous (1344-28-1)</b>	
<b>USA - ACGIH - Occupational Exposure Limits</b>	
ACGIH OEL TWA	1 mg/m <sup>3</sup> respirable dust
<b>phosphoric acid, conc=75%, aqueous solution (7664-38-2)</b>	
No additional information available	
<b>quartz (14808-60-7)</b>	
<b>USA - ACGIH - Occupational Exposure Limits</b>	
ACGIH OEL TWA	0.025 mg/m <sup>3</sup> (Silica-Crystalline Quartz; USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value; Respirable fraction)
<b>USA - OSHA - Occupational Exposure Limits</b>	
Local name	Silica, crystalline quartz, respirable dust
OSHA PEL (TWA) [1]	0.05 mg/m <sup>3</sup> respirable dust
Remark (OSHA)	(3) See Table Z-3.

### 8.2. Appropriate engineering controls

Appropriate engineering controls : Dust on tear out. Provide adequate ventilation to minimize dust concentrations.

### 8.3. Individual protection measures/Personal protective equipment

#### Personal protective equipment:

Avoid all unnecessary exposure.

<b>Hand protection:</b>
Wear protective gloves.
<b>Eye protection:</b>
Chemical goggles or safety glasses
<b>Skin and body protection:</b>
Wear suitable protective clothing
<b>Respiratory protection:</b>
Dust on tear out. Wear appropriate mask

#### 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	: Plastic.
Color	: Gray
Odor	: Acid Odor
Odor threshold	: No data available
pH	: < 3
pH solution concentration	: 10 %
Melting point	: > 3000 °F
Freezing point	: No data available
Boiling point	: No data available
Flash point	: No data available
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability (solid, gas)	: Not flammable.
Vapor pressure	: No data available
Relative vapor density at 20°C	: No data available
Relative density	: ≈ 2.8
Solubility	: Slightly soluble.
Partition coefficient n-octanol/water (Log Pow)	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity, kinematic	: Not Applicable
Viscosity, dynamic	: No data available
Explosion limits	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available

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### 9.2. Other information

No additional information available

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

Air Setting.

### 10.2. Chemical stability

Stable under normal conditions of use.

### 10.3. Possibility of hazardous reactions

Not established.

### 10.4. Conditions to avoid

No additional information available

### 10.5. Incompatible materials

No additional information available

### 10.6. Hazardous decomposition products

No additional information available

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Acute toxicity (oral) : Not classified

Acute toxicity (dermal) : Not classified

Acute toxicity (inhalation) : Not classified

#### aluminium oxide, non-fibrous (1344-28-1)

LD50 oral rat	> 15900 mg/kg body weight (Equivalent or similar to OECD 401, Rat, Male / female, Experimental value, Oral, 14 day(s))
LC50 Inhalation - Rat	> 2.3 mg/l air (Equivalent or similar to OECD 403, 4 h, Rat, Male / female, Experimental value, Inhalation (aerosol), 14 day(s))

#### phosphoric acid, conc=75%, aqueous solution (7664-38-2)

ATE US (oral)	4400 mg/kg body weight
Skin corrosion/irritation	: Causes skin irritation. pH: < 3

#### crystalobalite (14464-46-1)

pH	6 – 7
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#### aluminium oxide, non-fibrous (1344-28-1)

pH	9 – 10.5 (aqueous suspension, 33 %)
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#### phosphoric acid, conc=75%, aqueous solution (7664-38-2)

pH	0 – 0.5 (20 °C)
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#### quartz (14808-60-7)

pH	6 – 7
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Serious eye damage/irritation : Causes eye irritation.  
pH: < 3

#### crystalobalite (14464-46-1)

pH	6 – 7
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#### aluminium oxide, non-fibrous (1344-28-1)

pH	9 – 10.5 (aqueous suspension, 33 %)
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#### phosphoric acid, conc=75%, aqueous solution (7664-38-2)

pH	0 – 0.5 (20 °C)
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<b>quartz (14808-60-7)</b>	
pH	6 – 7
Respiratory or skin sensitization	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: After drying May cause cancer (Inhalation).
<b>quartz (14808-60-7)</b>	
IARC group	1 - Carcinogenic to humans
Reproductive toxicity	: Not classified
STOT-single exposure	: Not classified
STOT-repeated exposure	: Not classified
Aspiration hazard	: Not classified
Viscosity, kinematic	: Not Applicable
<b>aluminium oxide, non-fibrous (1344-28-1)</b>	
Viscosity, kinematic	Not applicable (solid)
Potential Adverse human health effects and symptoms	: Dust on tear out. Danger of serious damage to health by prolonged exposure through inhalation.
Symptoms/effects after inhalation	: After drying or heating. Danger of serious damage to health by prolonged exposure through inhalation. May cause cancer by inhalation.
Symptoms/effects after skin contact	: Causes skin irritation.
Symptoms/effects after eye contact	: Causes eye irritation.
<b>SECTION 12: Ecological information</b>	
<b>12.1. Toxicity</b>	
<b>aluminium oxide, non-fibrous (1344-28-1)</b>	
LC50 - Fish [1]	> 100 mg/l (96 h, Salmo trutta, Literature study)
EC50 - Crustacea [1]	> 100 mg/l (48 h, Daphnia magna, Literature study)
<b>12.2. Persistence and degradability</b>	
<b>REF Ram 850HS FG (Mixture)</b>	
Persistence and degradability	Not established.
<b>crystalite (14464-46-1)</b>	
Persistence and degradability	Mineral. Not applicable.
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable
BOD (% of ThOD)	Not applicable
<b>aluminium oxide, non-fibrous (1344-28-1)</b>	
Persistence and degradability	Not applicable.
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable
<b>phosphoric acid, conc=75%, aqueous solution (7664-38-2)</b>	
Persistence and degradability	Biodegradability: not applicable.
<b>quartz (14808-60-7)</b>	
Persistence and degradability	Not applicable.
Biochemical oxygen demand (BOD)	Not applicable
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable

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### 12.3. Bioaccumulative potential

#### REF Ram 850HS FG (Mixture)

Bioaccumulative potential	Not established.
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#### crystalobalite (14464-46-1)

Bioaccumulative potential	No data available.
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#### aluminium oxide, non-fibrous (1344-28-1)

Bioaccumulative potential	No data available.
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#### phosphoric acid, conc=75%, aqueous solution (7664-38-2)

Bioaccumulative potential	No test data of component(s) available.
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#### quartz (14808-60-7)

Bioaccumulative potential	No data available.
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### 12.4. Mobility in soil

#### crystalobalite (14464-46-1)

Ecology - soil	No data available.
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#### aluminium oxide, non-fibrous (1344-28-1)

Surface tension	No data available in the literature
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Ecology - soil	No data available.
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#### phosphoric acid, conc=75%, aqueous solution (7664-38-2)

Ecology - soil	Highly mobile in soil.
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### 12.5. Other adverse effects

Effect on the global warming : None known  
Other information : No other effects known.

## SECTION 13: Disposal considerations

### 13.1. Disposal methods

Product/Packaging disposal recommendations : Dispose in a safe manner in accordance with local/national regulations.

## SECTION 14: Transport information

In accordance with DOT / TDG / IMDG / IATA

#### Department of Transportation (DOT)

In accordance with DOT

Not regulated

#### Transportation of Dangerous Goods

Not regulated

#### Transport by sea

Not regulated

#### Air transport

Not regulated

## SECTION 15: Regulatory information

### 15.1. US Federal regulations

All components of this product are present and listed as Active on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory

#### aluminium oxide, non-fibrous (1344-28-1)

Not subject to reporting requirements of the United States SARA Section 313

Note	Note: The section 313 chemical list contains "CAS # 1344-28-1 Aluminum Oxide (Fibrous forms)"; the Aluminum oxide contained in this product is non-fibrous, and thus is not a section 313 material. Only manufacturing, processing, or otherwise use of aluminum oxide in the fibrous form triggers reporting.
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#### phosphoric acid, conc=75%, aqueous solution (7664-38-2)

Not subject to reporting requirements of the United States SARA Section 313

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<b>phosphoric acid, conc=75%, aqueous solution (7664-38-2)</b>	
CERCLA RQ	5000 lb

### 15.2. International regulations

#### CANADA

<b>crystalite (14464-46-1)</b>
Listed on the Canadian DSL (Domestic Substances List)

<b>aluminium oxide, non-fibrous (1344-28-1)</b>
Listed on the Canadian DSL (Domestic Substances List)

<b>phosphoric acid, conc=75%, aqueous solution (7664-38-2)</b>
Listed on the Canadian DSL (Domestic Substances List)

#### EU-Regulations

No additional information available

#### National regulations

<b>quartz (14808-60-7)</b>
Listed on IARC (International Agency for Research on Cancer)

### 15.3. US State regulations

<b>REF Ram 850HS FG (Mixture)</b>	
U.S. - California - Proposition 65 - Other information	This product contains crystalline silica, a chemical known to the state of California to cause cancer. For more information go to <a href="http://WWW.P65Warnings.ca.gov">WWW.P65Warnings.ca.gov</a>

<b>crystalite (14464-46-1)</b>					
U.S. - California - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significant risk level (NSRL)	Maximum allowable dose level (MADL)
Yes	No	No	No		

<b>quartz (14808-60-7)</b>					
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significant risk level (NSRL)	Maximum allowable dose level (MADL)
Yes	No	No	No		

Component	State or local regulations
Cristalite (14464-46-1)	U.S. - Massachusetts - Right To Know List; U.S. - New Jersey - Right to Know Hazardous Substance List; U.S. - Pennsylvania - RTK (Right to Know) List
aluminium oxide, non-fibrous (1344-28-1)	U.S. - Massachusetts - Right To Know List; U.S. - New Jersey - Right to Know Hazardous Substance List; U.S. - Pennsylvania - RTK (Right to Know) List
phosphoric acid, conc=75%, aqueous solution (7664-38-2)	U.S. - New Jersey - Right to Know Hazardous Substance List; U.S. - Pennsylvania - RTK (Right to Know) List
Quartz (14808-60-7)	U.S. - New Jersey - Right to Know Hazardous Substance List

### SECTION 16: Other information

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Revision date

: 7/12/2024

Other information

: Report language name. English. In the event of any conflict between English and other language versions, the English version shall prevail.

Full text of H-phrases	
H314	Causes severe skin burns and eye damage
H315	Causes skin irritation
H320	Causes eye irritation
H350	May cause cancer

Safety Data Sheet (SDS), USA

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