

## 1 Identification of the substance/mixture/product and of the company

### Product identifier

**Trade name:** **SANIT 91HV T3**  
**Application of the substance / the mixture** Refractory product

### Details of the supplier of the safety data sheet

**Manufacturer/Supplier:** RHI Canada Inc.  
 4355 Fairview Street  
 Burlington, Ontario L7L 2A4  
 Canada  
 Tel 905-639-8660

**Information department:** MSDS Technical Information  
 Mail: msds@rhi-ag.com

**Emergency telephone number:** Tel: +43 699 1870 5426  
 Fax: +43 502 13 5364

## 2 Hazard(s) identification

### Information concerning particular hazards for human and environment:

not applicable

### Hazard-determining components of labeling:

pitch, coal tar, high-temp.

### Special labeling of certain preparations:

USA NIOSH approved / Canada CSA-Z94.4-93 approved: Respirators should be used if dust / fume is present.  
 A respiratory protection program should be implemented if exposure exceeds the American Conference of Governmental Industrial Hygienists (ACGIH) defined Time Weighted Average (TWA)

The cancer risk occurs only in the presence of dust

### Classification system

#### NFPA ratings (scale 0-4)



Health = 2  
 Fire = 0  
 Reactivity = 0

#### HMIS Classification



Health = \*2  
 Fire = 0  
 Reactivity = 0

### Carcinogenicity:

The cancer risk occurs only in the presence of dust

### Other hazards

The product is tempered (heat-treated).

The product contains small amounts of residual phenol (<0.1 %). In order to minimize the formation of health and environment-relevant decomposition products, the specified heating conditions have to be observed.

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The binder can decompose at high temperatures (>250 °C) releasing products of combustion and pyrolysis of the organic binder components (such as phenol and phenol-related compounds, polyaromatic hydrocarbons and derivatives)

Binder from a mix of polyaromatic and heterocyclic hydrocarbons.

The product contains small amounts of PAHs (polynuclear aromatic hydrocarbons). At temperatures >250 °C or during dust formation PAHs can be released.

See section 11.

## 3 Composition/information on ingredients

### Chemical characterization: Mixtures

#### Description:

Shaped refractory product on the basis of  
The product is pitch-impregnated.

The product is tempered (heat-treated).

#### Dangerous components:

1344-28-1	aluminium oxide (non-fibrous form)	60-100%
1309-48-4	magnesium oxide	7-13%
7429-90-5	aluminium	5-7%
7782-42-5	graphite	3-5%
	phenolic resin hardened	1.5-3%
	synthetic pitch, heat-treated	1-1.5%

#### Additional information

This product may contain tiny amounts of binder and components such as phenol. These organic matters can be liberated during heating of the refractory material (smoke emission/ bad smell).

The phenolic resin used may cause an ammonia/fishy like smell, which might appear during storage (especially under humid conditions) or heat-up.

Repeated overexposure to very high levels of respirable Crystalline Silica (quartz, cristobalite, tridymite) for periods as short as six months have caused acute silicosis. Excessive inhalation of dust may result in respiratory disease, including silicosis, pneumoconiosis and pulmonary fibrosis.

## 4 First-aid measures

### Description of first aid measures

#### General information

Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

#### After inhalation

Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.

In case of unconsciousness place patient stably in side position for transportation.

#### After skin contact

Generally the product does not irritate the skin.

#### After eye contact

Rinse opened eye for several minutes under running water. Then consult a doctor.

#### After swallowing

If symptoms persist consult doctor.

#### Most important symptoms and effects, both acute and delayed:

No further relevant information available.

#### Indication of any immediate medical attention and special treatment needed:

No further relevant information available.

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## 5 Fire-fighting measures

### Extinguishing media

For safety reasons unsuitable  
extinguishing agents

Not applicable, the product is fire resistant.

### Special hazards arising from the substance or mixture

see section 2

### Advice for firefighters

Protective equipment /

Protection of firefighters:

Harzardous combustion  
products

Mount respiratory protective device.

Will not occur.

Flammable properties

The product is fire resistant.

Not flammable.

Additional information:

Additional information see section 9.

## 6 Accidental release measures

### Personal precautions, protective equipment and emergency procedures

See section 8.

### Environmental precautions:

See section 12.

### Methods and material for containment and cleaning up:

Dispose contaminated material as waste according to item 13.  
Ensure adequate ventilation.

### Reference to other sections

See Section 7 for information on safe handling.  
See Section 8 for information on personal protection equipment.  
See Section 13 for disposal information.

## 7 Handling and storage

### Precautions for safe handling

Thorough dedusting.  
Ensure good ventilation/exhaustion at the workplace.  
Prevent formation of dust.

### Information about protection

against explosions and fires: The product is not flammable.

### Conditions for safe storage, including any incompatibilities

#### Storage

Requirements to be met  
by storerooms and  
receptacles:

No special requirements.

Information about storage  
in one common storage

facility:

Not applicable.

Further information about  
storage conditions:

Keep receptacle tightly sealed.  
Store in dry conditions.

### Specific end use(s)

No further relevant information available.

## 8 Exposure controls/personal protection

### Additional information about design of technical systems:

No further data; see item 7.

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## Control parameters

Exposure Guidelines (Components with limit values that require monitoring at the workplace):	
<b>1344-28-1 aluminium oxide (non-fibrous form)</b>	
PEL	Long-term value: 15*; 15** mg/m <sup>3</sup> *Total dust; ** Respirable fraction
REL	Long-term value: 10* 5** mg/m <sup>3</sup> as Al*Total dust**Respirable/pyro powd./welding f.
TLV	Long-term value: 1* mg/m <sup>3</sup> as Al; *as respirable fraction
<b>1309-48-4 magnesium oxide</b>	
PEL	Long-term value: 15* mg/m <sup>3</sup> fume; *total particulate
TLV	Long-term value: 10* mg/m <sup>3</sup> *as inhalable fraction
<b>7429-90-5 aluminium</b>	
PEL	Long-term value: 15*; 15** mg/m <sup>3</sup> *Total dust; ** Respirable fraction
REL	Long-term value: 10* 5** mg/m <sup>3</sup> as Al*Total dust**Respirable/pyro powd./welding f.
TLV	Long-term value: 1* mg/m <sup>3</sup> as Al; *as respirable fraction
<b>7782-42-5 graphite</b>	
PEL	Long-term value: 15 mppcf* mg/m <sup>3</sup> *impinger samples counted by light field techn.
REL	Long-term value: 2.5* mg/m <sup>3</sup> *respirable dust
TLV	Long-term value: 2* mg/m <sup>3</sup> all forms except graphite fibers;*resp. fraction

### Additional information: Decomposition products:

CAS 108-95-2 phenol  
 TWA: 5 (ppm) from ACGIH (TLV) [United States]  
 SKIN TWA: 19 (mg/m3) from ACGIH (TLV) [United States]  
 SKIN TWA: 5 from NIOSH [United States]  
 TWA: 19 (mg/m3) from NIOSH [United States]  
 TWA: 5 (ppm) from OSHA (PEL) [United States]  
 TWA: 19 (mg/m3) from OSHA (PEL) [United States]  
 TWA: 5 (ppm) [Canada]  
 TWA: 19 (mg/m3) [Canada]  
 Consult local authorities for acceptable exposure limits.  
 The lists that were valid during the creation were used as basis.

## Exposure controls

### Personal protective equipment (PPE)

#### General protective and hygienic measures

Keep away from foodstuffs, beverages and feed.  
 Wash hands before breaks and at the end of work.  
 Avoid contact with the eyes and skin.

#### Respiratory protection /

##### Breathing equipment:

NIOSH approved respirators should be used if dust is present. A respiratory protection program should be implemented if exposure exceeds OSHA PELs.

##### Respiratory protection

##### Protection of hands:

Filter P100  
 Leather gloves  
 Protective gloves  
 Safety glasses with side shields  
 Protective work clothing.

##### Eye/face protection:

##### Skin protection:

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## 9 Physical and chemical properties

### Information on basic physical and chemical properties

#### General Information

#### Appearance:

Form (Physical state):	Solid
Color:	Black
Odor:	Aromatic
Odor threshold:	Not determined.

**pH-value:** Not applicable.

**Melting point / Melting range:** Not determined.

**Flash point:** Not applicable.

**Flammability (solid, gaseous)** Product is not flammable.  
See section 5.

**Ignition temperature:** Not applicable.

**Decomposition temperature:** Not applicable.

**Auto igniting:** Product is not self igniting.

**Danger of explosion:** Product does not present an explosion hazard.

#### Explosion limits:

Lower:	Not applicable.
Upper:	Not applicable.

<b>Vapor pressure:</b>	Not applicable.
<b>Relative density</b>	Not applicable.
<b>Vapour density</b>	Not applicable.
<b>Evaporation rate</b>	Not applicable.

**Solubility in / Miscibility with Water:** Not applicable.  
Insoluble.

**Partition coefficient (n-octanol/water):** Not applicable.

<b>Viscosity:</b>	Not applicable.
<b>dynamic:</b>	Not applicable.
<b>kinematic:</b>	Not applicable.

**Other information** No further relevant information available.

#### Additional information

Melting Point: NA  
Freezing Point: NA  
Viscosity (and units): NA  
Odor Threshold (ppm): NA  
Evaporation Rate (relative to): NA  
Vapor Density (air =1): NA  
Vapor Pressure (units): NA  
pH (undiluted): NA  
pH (diluted): NA  
% dilution: NA  
VOC Content: NA  
% Volatile: NA  
PM Content: NA

## 10 Stability and reactivity

### Reactivity

#### Chemical stability

#### Conditions to avoid (Thermal decomposition):

No decomposition if used and stored according to specifications.  
The product itself is not combustible, but decomposition products of the binder which are formed during heating up are combustible

#### Possibility of hazardous reactions

No dangerous reactions known

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**Conditions to avoid  
Hazardous decomposition  
products:**

No further relevant information available.

**Hydrogen**

Binder from a mix of polyaromatic and heterocyclic hydrocarbons. The product contains small amounts of PAHs (polynuclear aromatic hydrocarbons). At temperatures >250 °C or during dust formation PAHs can be released.

In order to minimize the formation of health and environment-relevant decomposition products, the specified heating conditions have to be observed.

In the refractory product a phenolic resin is used as binder. In the supplied form the phenolic resin has been cured which means the binder has polymerized under heat treatment to its solid form. Decomposition during heating: in the presence of sufficient air and heating rate, the gaseous products are mostly carbon dioxide and water. Under low or limited oxygen pressure decomposition during heat-up and early service may lead to fume formation which contains mixture of decomposition products of the cured polymer. After service, the binder will normally have been coked to a great extent and in that condition the material for disposal would be carbon and an inorganic oxide.

## 11 Toxicological information

**Information on toxicological effects**
**Acute toxicity:**
**LD/LC50 values that are relevant for classification:**
**phenolic resin hardened**

Inhalative LC50/4 h 316 mg/l (rat)

**Primary irritant effect:**
**on the skin:**

May cause dryness and irritation

**on the eye:**

In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

**Additional toxicological  
information:**

Harmful

If this product has been in service at temperatures greater than 1000°C (1800°F) it may contain cristobalite, a form of crystalline silica.

IARC has classified crystalline silica, which includes cristobalite, as a group I carcinogen (known human carcinogen).

**Carcinogenic categories**
**IARC (International Agency for Research on Cancer)**

None of the ingredients is listed.

**NTP (National Toxicology Program)**

None of the ingredients is listed.

**OSHA-Ca (Occupational Safety & Health Administration)**

None of the ingredients is listed.

## 12 Ecological information

**Toxicity**
**Aquatic toxicity:**

No further relevant information available.

**Persistence and degradability**

No further relevant information available.

**Bioaccumulative potential**

No further relevant information available.

**Mobility in soil**

No further relevant information available.

**Results of PBT and vPvB assessment**
**PBT:**

Not applicable.

**vPvB:**

Not applicable.

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Other adverse effects

No further relevant information available.

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## 13 Disposal considerations

### Waste treatment methods

#### Recommendation

Can be recycled at time of supply.  
US EPA Waste Number & Descriptions

#### A: General Product Information

This product, when discarded in its purchased form, is not considered a characteristic hazardous waste according to Federal regulations (40 CFR 261). You must test your waste using methods described in 40 CFR Part 261 to determine if it meets these or other applicable definitions of hazardous wastes.

#### B: Component Waste Numbers

No EPA Waste Numbers are applicable for this product's components.

#### Disposal Instructions

Dispose of waste material according to Local, State, Federal, and Provincial Environmental Regulations.

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

### Uncleaned packagings:

#### Recommendation:

Disposal must be made according to official regulations.

## 14 Transport information

### UN-Number

DOT, ADR, ADN, IMDG, IATA

not applicable

### UN proper shipping name

DOT, ADR, ADN, IMDG, IATA

not applicable

### Transport hazard class(es)

DOT, ADR, ADN, IMDG, IATA  
Class

not applicable

### Packing group

DOT, ADR, IMDG, IATA

not applicable

### Environmental hazards:

Not applicable.

### Special precautions for user

Danger code (Kemler):

Not applicable.

Not applicable.

### Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

Not applicable.

### Transport/Additional information:

Not dangerous according to available informations.

## 15 Regulatory information

### Safety, health and environmental regulations/legislation specific for the substance or mixture

#### TSCA (Toxic Substances Control Act):

1344-28-1 aluminium oxide (non-fibrous form)

1309-48-4 magnesium oxide

7429-90-5 aluminium

7782-42-5 graphite

phenolic resin hardened

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## Proposition 65

## Chemicals known to cause cancer:

None of the ingredients is listed.

## Chemicals known to cause reproductive toxicity for females:

None of the ingredients is listed.

## Chemicals known to cause reproductive toxicity for males:

None of the ingredients is listed.

## Chemicals known to cause developmental toxicity:

None of the ingredients is listed.

## WHMIS

D2A - Very toxic material causing other toxic effects

Additional  
classification  
according to Decree  
on Hazardous  
Materials

Possible decomposition products: phenol and different derivatives

## Carcinogenicity categories

## EPA (Environmental Protection Agency)

None of the ingredients is listed.

## TLV (Threshold Limit Value established by ACGIH)

1344-28-1	aluminium oxide (non-fibrous form)	A4
1309-48-4	magnesium oxide	A4
7429-90-5	aluminium	A4

## MAK (German Maximum Workplace Concentration)

1344-28-1	aluminium oxide (non-fibrous form)	2
14808-60-7	quartz (SiO <sub>2</sub> )	1

## NIOSH-Ca (National Institute for Occupational Safety and Health)

None of the ingredients is listed.

## Product related hazard informations:

## Risk phrases:

Harmful by inhalation and in contact with skin.  
 Danger of serious damage to health by prolonged exposure.

## Safety phrases:

Do not breathe dust.  
 Avoid contact with skin.  
 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.  
 Wear suitable protective clothing, gloves and eye/face protection.  
 In case of accident or if you feel unwell, seek medical advice immediately.  
 If swallowed, seek medical advice immediately and show this container or label.  
 In case of accident by inhalation: remove casualty to fresh air and keep at rest  
 If swallowed, rinse mouth with water (only if the person is conscious)

Special labeling of certain  
preparations:

If dust or fumes are present, wear NIOSH approved respirator.

## National regulations:

## SARA 313 TOXIC CHEMICALS

7429-90-5 aluminium

## SARA 302 EXTREMELY HAZARDOUS SUBSTANCES

No material listed in the components in Section 3 of this MSDS is on the SARA 302 list.

TSCA (Toxic  
Substances Control  
Act)

This substance or all the ingredients of this product are on the Chemical Substances Inventory of the Toxic Substances Control Act (TSCA Inventory). The presence on this list does not require any legal reporting

## HMIS Classification

Class D - Division 2 - Subdivision A  
 Untested mixture containing a very toxic material

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Class D - Division2 - Subdivision B

Untested mixture containing a toxic material

This product has been classified in accordance with hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all information required by the CPR.

## 16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

**Relevant phrases**

The manufactured good, even treated as a compound, has been cured, hence the benzoapyren is lower than 50ppm.

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\* Data compared to the previous version altered.

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