

## 1 Product and Company Identification:

### Product details:

- Trade name: **PLIVAFORM**
- Application of the substance / the preparation: Refractory product
- 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 information: Tel: +43 50213 5361  
Fax: +43 50213 5364

## 2 Hazards identification

- Emergency overview: CAUTION  
Irritating to eyes.  
Irritating to skin.  
Irritating to respiratory system.  
Harmful by inhalation.

WHIMS-symbols: D2A - Very toxic material causing other toxic effects

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- Classification system: The classification was made according to the latest editions of international substances lists, and expanded upon from company and literature data.

- NFPA ratings (scale 0-4):
 

2	0	0
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 Health = 2  
Fire = 0  
Reactivity = 0

- HMIS Classification:
 

HEALTH	2
FIRE	0
REACTIVITY	0

 Health = \*2  
Fire = 0  
Reactivity = 0

- Potential health effects: See section 11 for more information
- Route of entry:
  - Skin contact: applicable
  - Skin absorption: not applicable
  - Eye contact: applicable
  - Acute inhalation: applicable
  - Chronic inhalation: not applicable
  - Ingestion: not applicable
- Effects of acute exposure to product: Harmful by inhalation.  
Irritating to skin.  
Irritating to eyes.  
Irritating to respiratory system.
- Effects of chronic exposure to product: Harmful by inhalation.
- Irritancy of the product: Eyes, skin, respiratory system
- Sensitization to the product: none
- Carcinogenicity: May cause cancer by inhalation.
- Reproductive toxicity: not listed
- Teratogenicity: not listed

Trade name: **PLIVAFORM**

(Contd. of page 1)

- **Mutagenicity:** not listed
- **Name of toxicologically synergistic products:** none reported
- **Potential Environmental Effects** See section 12 for more information
- **Additional information:** See section 11

**3 Composition/Data on components:**· **Chemical characterization**· **Description:** Shaped refractory product on the basis of

14808-60-7	quartz (SiO <sub>2</sub> )	<0.1%
· <b>Dangerous components:</b>		
142844-00-6	refractory ceramic fiber	60-100%
69012-64-2	fumes, silica	7-13%
9005-25-8	Starch	5-7%

**4 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** Immediately wash with water and soap and rinse thoroughly.  
If skin irritation continues, consult a doctor.
- **After eye contact** Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- **After swallowing** If symptoms persist consult doctor.
- **Information for doctor / Note to physicians** Provide general supportive measures and treat symptomatically

**5 Fire fighting measures**

- **Suitable extinguishing agents** Not applicable, the product is fire resistant
- **For safety reasons unsuitable extinguishing agents** Not applicable, the product is fire resistant
- **Protective equipment / Protection of firefighters:** No special measures required.  
Mount respiratory protective device.
- **Hazardous combustion products** Will not occur
- **Flammable properties** The product is fire resistant  
Not flammable
- **Conditions of flammability** Not applicable
- **Flash point and method of determination** Not applicable
- **Upper flammable limit** Not applicable
- **Lower flammable limit** Not applicable
- **Auto-ignition temperature** Not applicable
- **Explosion data - sensitivity to mechanical impact** Not applicable
- **Explosion data - sensitivity to static discharge** Not applicable

(Contd. on page 3)

CDN

Trade name: **PLIVAFORM**· **Additional information:** Additional information see section 9

(Contd. of page 2)

**6 Accidental release measures**

- **Person-related safety precautions:** Avoid formation of dust.  
see section 8
- **Measures for environmental protection:** Do not allow to enter sewers/ surface or ground water.  
Keep contaminated washing water and dispose of appropriately.  
see section 12
- **Measures for cleaning/collecting:** Dispose contaminated material as waste according to item 13.  
Ensure adequate ventilation.  
Dispose of the collected material according to regulations.
- **Additional information:** 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**

- **Handling**
  - **Information for safe handling:** Thorough dedusting.  
Ensure good ventilation/exhaustion at the workplace.  
Prevent formation of dust.  
Decant and handle the product in dust-proof units.
  - **Information about protection against explosions and fires:** The product is not flammable
- **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.

**8 Exposure controls and personal protection**· **Exposure Guidelines (Components with limit values that require monitoring at the workplace):****69012-64-2 fumes, silica**

EL (Canada)	4* 1.5** mg/m <sup>3</sup>
EV (Canada)	*total; **respirable
TWAEV (ON) (Canada)	2 mg/m <sup>3</sup>
TLV (USA)	respirable
	2 mg/m <sup>3</sup> (respirable)
	TLV withdrawn

**9005-25-8 Starch**

EL (Canada)	10 mg/m <sup>3</sup>
EV (Canada)	10 mg/m <sup>3</sup>
	total dust
TWAEV (ON) (Canada)	10 mg/m <sup>3</sup>
PEL (USA)	15* 5** mg/m <sup>3</sup>
	*total dust **respirable fraction
REL (USA)	10* 5** mg/m <sup>3</sup>
	*total dust **respirable fraction
TLV (USA)	10 mg/m <sup>3</sup>

- **Additional information:** The lists that were valid during the creation were used as basis.  
PEL(USA) = PEL(OSHA)  
REL (USA) = REL (NIOSH)  
TLV (USA) = TLV (ACGIH)

(Contd. on page 4)

CDN

**Trade name: PLIVAFORM**

(Contd. of page 3)

EL (Canada) = British Columbia  
EV (Canada) = Ontario

**· Engineering controls**

Demarcate work area and allow only qualified workers access to it  
Use working techniques that limit dust emission and exposure of workers to dust  
Keep the working place clean. Use vacuum cleaners with filter of dust class H according to EN 60335-2-69 (up to now ZG 1/478, use category C)  
Strictly avoid cleaning with a broom or with compressed air  
Use exhaust ventilation (dust collector) or other engineering controls at handling points to keep airborne levels below recommended exposure limits

**· 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.  
Vacuum clean contaminated clothing. Do not blow or brush off contamination.  
Avoid close or long term contact with the skin.  
Avoid contact with the eyes and skin.

**· Respiratory protection / Breathing equipment:****· Respiratory protection**

NIOSH approved respirators selected in accordance with the applicable CSA Standard Z94.4-93 should be used if dust is present.  
A respiratory protection program should be implemented if exposure exceeds the American Conference of Governmental industrial Hygienists (ACGIH) Time Weighted Average (TWA)  
Filter P100

**· Protection of hands:**

Protective gloves.

Protective gloves

**· Eye/face protection:**

Safety glasses with side shields

**· Skin protection:**

Light weight protective clothing

**9 Physical and chemical properties:****· General Information**

· <b>Form (Physical state):</b>	Solid in various forms
· <b>Color:</b>	Light beige
· <b>Odor:</b>	Characteristic
· <b>Odor threshold</b>	not applicable
· <b>Melting point / Melting range:</b>	undetermined
· <b>Boiling point/Boiling range:</b>	undetermined

· <b>Flash point:</b>	Not applicable
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· <b>Flammability (solid, gaseous)</b>	Product is not flammable. see section 5
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· <b>Ignition temperature:</b>	not applicable
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· <b>Decomposition temperature:</b>	not applicable
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· <b>Auto igniting:</b>	Product is not self igniting.
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· <b>Danger of explosion:</b>	Product does not present an explosion hazard.
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· <b>Vapor pressure:</b>	not applicable
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· <b>Specific Gravity/Density:</b>	see technical datasheet
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· <b>Relative density</b>	not applicable
· <b>Vapour density</b>	not applicable
· <b>Evaporation rate</b>	not applicable

(Contd. on page 5)

Trade name: **PLIVAFORM**

(Contd. of page 4)

· <b>Solubility in / Miscibility with</b>	<i>not applicable</i>
· <b>pH-value:</b>	<i>not applicable</i>
· <b>Segregation coefficient (n-octanol/water):</b>	<i>not applicable</i>
· <b>Viscosity:</b>	<i>not applicable</i>

**10 Stability and reactivity**

· <b>Conditions to avoid (Thermal decomposition):</b>	<i>No decomposition if used and stored according to specifications.</i>
· <b>Incompatible materials:</b>	<i>No incompatible materials known</i>
· <b>Dangerous reactions:</b>	<i>No dangerous reactions known</i>
· <b>Hazardous decomposition products:</b>	<i>No dangerous decomposition products known</i>
· <b>Chemical stability:</b>	<i>Stable</i>

**11 Toxicological information**

· <b>Acute toxicity:</b>	
· <b>LD/LC50 values that are relevant for classification:</b>	<i>not applicable</i>
· <b>Primary irritant effect:</b>	
· <b>on the skin:</b>	<i>Irritant to skin and mucous membranes. All artificial mineral fibres as well as some natural fibres can cause a slight irritation and itching or more rarely a reddening, if skin is very sensitive. Unlike other reactions to irritation, the latter is not of an allergic or chemical nature, but only due to a temporary mechanical effect. May cause dryness and irritation</i>
· <b>on the eye:</b>	<i>May cause eye irritation</i>
· <b>Other information (about experimental toxicology):</b>	<i>Another study with rats (dose of 3, 6 and 9 mg/m<sup>3</sup> corresponds to 25, 75 and 115 F/cm<sup>3</sup>) was completed after 29 months. Dose-dependent biological effects of ceramic fibres were observed. At all concentrations a rise in the lung cancer rate was not observed. An increased rate of pulmonary fibrosis occurred at concentrations of 6 and 9 mg/m<sup>3</sup>. Only one rat from the 9mg/m<sup>3</sup> group was diagnosed with pleural fibrosis and a mesothelioma. No pulmonary fibroses were observed among the groups of animals with less than 9mg/m<sup>3</sup>. Data concerning the carcinogenicity of synthetic mineral fibres (including ceramic fibres, glass wool, rockwool and slag wool) were published in 1987 by WHO-IARC. On the basis of these available data, ceramic fibres were classified as belonging to the group of substances possibly causing cancer in humans (2B). This classification was performed on the basis of animal tests as there was no data concerning the effect of ceramic fibres on humans. A series of inhalation toxicology tests was recently carried out on rats and hamsters with the aim of identifying the effect of ceramic fibres on health. Pulmonary damage (interstitial fibrosis), lung cancer and pleural cancer (mesothelioma) were observed in a chronic nasal inhalation study performed on rats, at a maximum dose of 30 mg/m<sup>3</sup> (200 F/cm<sup>3</sup>).</i>
· <b>Additional toxicological information:</b>	<i>Harmful Irritant Carcinogenic if inhaled. Irritating to eyes, respiratory system and skin.</i>

CDN

(Contd. on page 6)

# Material Safety Data Sheet

Printing date 01/23/2012

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Trade name: **PLIVAFORM**

(Contd. of page 5)

## 12 Ecological information:

- **Information about elimination (persistence and degradability):**
- **Other information:** This product is according to previous experiences inert and non-degradable.

## 13 Disposal considerations

- **Product:**
- **Recommendation** Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
- Can be entirely recycled in state at time of supply.
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.

## 14 Transport information

- **DOT regulations:**
- **Hazard class:** -
- **TDG class:** -
- **Danger code (Kemler):** not applicable
- **UN-Number:** not applicable
- **Description of goods:** not applicable
- **Maritime transport IMDG:**
- **IMDG Class:** -
- **Air transport ICAO-TI and IATA-DGR:**
- **ICAO/IATA Class:** -
- **Transport/Additional information:** Not dangerous according to available informations.

## 15 Regulations

- **TSCA (Toxic Substances Control Act):**
- 69012-64-2 fumes, silica
- 9005-25-8 Starch
- **Proposition 65**
- **Chemicals known to cause cancer:**
- 142844-00-6 refractory ceramic fiber
- **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.
- **National regulations**
- **WHMIS** D2A - Very toxic material causing other toxic effects
- **Additional classification according to Decree on Hazardous Materials** Class D - Division 2
- **Carcinogenity categories**
- **EPA (Environmental Protection Agency)**
- None of the ingredients is listed.

(Contd. on page 7)

CDN



**Material Safety Data Sheet**

Printing date 01/23/2012

Reviewed on 01/23/2012

**Trade name: PLIVAFORM**

(Contd. of page 6)

· <b>IARC (International Agency for Research on Cancer)</b>		
69012-64-2	fumes, silica	3
· <b>TLV (Threshold Limit Value established by ACGIH)</b>		
9005-25-8	Starch	A4
· <b>Canadian substance listings:</b>		
· <b>Canadian Domestic Substances List (DSL)</b>		
69012-64-2	fumes, silica	
9005-25-8	Starch	
· <b>Canadian Ingredient Disclosure list (limit 0.1%)</b>		
None of the ingredients is listed.		
· <b>Canadian Ingredient Disclosure list (limit 1%)</b>		
None of the ingredients is listed.		

· **Product related hazard informations:**

The product has been classified and marked in accordance with directives on hazardous materials.

· **Risk phrases:**

May cause cancer by inhalation.  
Also harmful by inhalation.  
Irritating to eyes, respiratory system and skin.

· **Safety phrases:**

Do not breathe dust.  
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:**

NIOSH approved respirators selected in accordance with the applicable CSA Standard.Z94.4-93 should be used if dust is present.  
A respiratory protection program should be implemented if exposure exceeds the American Conference of Governmental industrial Hygienists (ACGIH) Time Weighted Average(TWA)

\*

**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.

· **Training hints**

Employees should be informed of "any use including handling of products containing ceramic fibres", "possible hazards due to exposure to fibre dust", "the restriction concerning smoking, eating and drinking in the workplace", "requirements for safety equipment and safety clothes".  
Employees should be instructed "how to handle products emitting small quantities of dust, in order to limit dust emission", "on how best to use safety equipment".

· **Department issuing MSDS:**

RHI AG Technology Center  
Chemistry Department  
Austria  
Phone: +43 502 13 5426  
Mail: msds@rhi-ag.com

· **Contact:**

for Canada:  
Brian Plaskett  
Corporate EHS Manager  
RHI Canada Inc. / Veitsch-Radex America Inc.  
Cell: (519)318-5401  
Fax: (905)639-1299 (Burlington)

(Contd. on page 8)

CDN

**Material Safety Data Sheet**

Printing date 01/23/2012

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**Trade name: PLIVAFORM**

(Contd. of page 7)

Mail: [brian.plaskett@rhicanada.ca](mailto:brian.plaskett@rhicanada.ca)· **ref.:***Hazards from the use of refractory ceramic fiber, Health and safety executive, Infoblatt, HSE 2676/(1998)*· **Issue date***see header*· **\* Data compared to the  
previous version altered.**

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