



# MATERIAL SAFETY DATA SHEET

*This Material Safety Data Sheet meets or exceeds the requirements of the Canadian Controlled Product Regulations (WHMIS)*

## 1. Product and Supplier Identification

**Product:** Iron Shield

**Product Use:** Iron stain preventer

**Supplier:** Canadian Building Restoration Products, Inc.,  
#102, 876 Cordova Diversion  
Vancouver, BC Canada V6A 3R3  
Emergency Telephone: (604) 254-3325

**Manufacturer:** As above

## 2. Composition

| Component   | % (w/w)   | Exposure Limits (ACGIH) <sup>1</sup>                                  | LD <sub>50</sub>                                    | LC <sub>50</sub>                  |
|---|-----------|---|---|-----------------------------------|
| Phosphoric Acid<br>CAS No 7664-38-2   | 15 - 40   | TLV-TWA: 1 mg/m <sup>3</sup>  | 1530 mg/kg (oral/rat)<br>2740 mg/kg (dermal/rabbit) | >213 mg/m <sup>3</sup> (rat/4 hr) |
| Bis(hexamethylene)triaminopenta (methylene phosphonic acid)<br>CAS No. 34690-00-1 | 7 - 13    | None established  | Not available                                       | Not available                     |
| Hydrochloric Acid<br>CAS No.7647-01-0   | 0.5 – 1.5 | TLV-C: 2 ppm (Ceiling Exposure Limit)<br>Basis: Irritation, Corrosion | 700 mg/kg (oral/rat)                                | 1562 ppm (male rat/4 hr)          |

<sup>1</sup> American Conference of Governmental Industrial Hygienists (ACGIH). Exposure limits may vary from time to time and from one jurisdiction to another. Check with local regulatory agency for the exposure limits in your area.

## 3. Hazards Identification

### Routes of Entry:

Skin Contact: Major    Eye Contact: Major    Ingestion: Moderate    Inhalation: Moderate

**Emergency Overview:** Corrosive liquid! Direct contact with skin or eyes may produce burns, which may cause scarring. Severe exposure to eyes may cause permanent eye damage including blindness. Effects of acute exposure may be delayed. Contact with amphoteric metals such as aluminum may cause release of flammable hydrogen gas.

**Acute Health Effects:** Corrosive liquid! Direct contact with skin may produce burns, which may cause scarring. At the very least, irritation may occur upon contact. Effects may be delayed. Contact with eyes will cause severe burning resulting in damage to cornea. In severe case contact may cause blindness. The severity of damage depends on the duration of the exposure. In general, solutions and mists with a pH of 3 or less are a significant health concern. Contact with amphoteric metals such as aluminum may cause release of flammable hydrogen gas.

**Chronic Health Effects:** Long term exposure may cause dental erosion, turning tooth enamel brownish. Repeated low concentration exposure to the skin can cause redness, swelling, and dermatitis. Inhalation of hydrochloric acid vapours, in time may cause easy bleeding of the nose and gums. Not considered to be a sensitizer.

#### 4. First Aid Measures

**Eye Contact:** Flush contaminated eye(s) with lukewarm, gently running water for 60 minutes by the clock, holding eyelids open. Use a neutral saline solution, if available to bathe the eyes. **Do not interrupt** the flushing of the eyes. If necessary, keep emergency vehicle waiting. Take care not to contaminate unaffected eye, or face. Transport victim to emergency center as soon as is possible. Seek immediate medical attention.

**Skin Contact:** Remove contaminated clothing including watchbands, shoes, belts, etc. Flush affected area immediately with lukewarm, gently flowing water for at least 60 minutes, by the clock. **Do not interrupt** the flushing of the eyes. If necessary, keep emergency vehicle waiting. Transport victim to emergency center as soon as is possible. Seek immediate medical attention. Discard any contaminated clothing.

**Inhalation:** If victim has been exposed to vapours remove to fresh air. If breathing has stopped, a trained person should perform artificial respiration. Get medical attention immediately.

**Ingestion:** Never give anything by mouth if victim is rapidly losing consciousness. Have victim rinse mouth thoroughly with water. **Do not induce vomiting.** Dilute contents of stomach with 240 to 300 ml of water. If milk is available, it may be administered after giving water. If vomiting occurs naturally have victim lean forward to reduce risk of aspiration. Repeat dilution by giving water as above. Seek medical attention by transporting to an emergency facility quickly.

**Potential for Accumulation:** Will not accumulate

#### 5. Fire Fighting Measures

|   |  |
|---|--|
| <b>Flash point:</b>                     | Not applicable   |
| <b>Autoignition temperature:</b>        | Not applicable. See information under "Fire Fighting Instructions" |
| <b>Lower Explosive Limit:</b>           | Not applicable   |
| <b>Upper Explosion Limit:</b>           | Not applicable   |
| <b>Sensitivity to Impact:</b>           | Not sensitive.   |
| <b>Sensitivity to Static Discharge:</b> | Not sensitive.   |

**Hazardous Combustion Products:** May contain phosphine, oxides of carbon and nitrogen.

**Extinguishing Media:** Use extinguishing media compatible with acid and appropriate for burning material. Use water spray to cool fire exposed containers.

**Fire Fighting Instructions:** Do not enter confined fire space without proper personal protection. Use approved positive pressure self-contained breathing apparatus.

## 6. Accidental Release Measures

**Personal Protection:** See Section 8 for proper protective equipment to be worn while cleaning an accidental spill.

**Environmental Precautions:** Prevent product from entering sewers, natural waterways, or confined spaces.

**Cleanup Procedures:** Neutralize with soda ash and absorb onto sand or other inert absorbent media. Shovel into approved closable waste containers for disposal. Thoroughly flush residue with water.

## 7. Handling and Storage

**Handling Procedures:** This product is corrosive, producing acid vapours in air. Before handling, it is imperative that the personal equipment requirements and personal hygiene measures be followed. Inspect containers for damage or leaks before handling. Unprotected persons should avoid all contact with this product including contaminated equipment. Do not use with incompatible materials such as strong bases, reducing agents, and oxidizing materials. Avoid uses that may cause the product to mist or splash such as rinsing with high-pressure water sprays. Ensure all containers are correctly labeled indicating hazards. Keep container tightly closed when not in use. Wash face and hands thoroughly after handling, and before eating, drinking, or using tobacco products.

**Storage:** Store in cool, dry place and in an upright position to prevent leakage and away from acids and other incompatible materials.

## 8. Exposure Controls, Personal Protection

**Engineering Controls:** If used indoors, ensure adequate ventilation by using local exhaust. Prevent handling methods that will increase airborne vapours.

**Respiratory Protection:** For vapour concentrations up to 50 ppm, use chemical cartridge respirator to protect against hydrogen chloride or phosphoric acid vapours. For concentrations in excess of 50 ppm use supplied air respirator (SAR).

**Skin Protection:** Use chemical protective gloves, coveralls, aprons, overshoes.

**Eye and Face Protection:** Chemical splash-proof goggles or face shield must be worn at all times.

**Footwear:** Chemical resistant boots or overshoes.

**Other:** Eye wash station should be located near work area.

## 9. Physical and Chemical Properties

|                         |                               |                               |                   |
|-------------------------|-------------------------------|-------------------------------|-------------------|
| <b>Appearance:</b>      | Clear amber liquid            | <b>Freezing Point</b>         | <0 °C             |
| <b>Odour:</b>           | Faint amine                   | <b>Boiling Point:</b>         | >100°C            |
| <b>Odour Threshold:</b> | Not determined                | <b>Critical Temperature:</b>  | Not applicable.   |
| <b>pH:</b>              | <2.0 (1% v/v)                 | <b>Relative Density:</b>      | >1<br>(water = 1) |
| <b>Vapour Pressure:</b> | 2.27 kPa @ 20 °C              | <b>Partition Coefficient:</b> | No data           |
| <b>Solubility:</b>      | Infinite solubility in water. | <b>Evaporation Rate:</b>      | Slow              |
| <b>Vapour Density:</b>  | Not available                 |                               |                   |

## 10. Stability and Reactivity

**Chemical Stability and Reactivity:** Product is stable.

**Incompatibility:** Avoid contact with oxidizing agents and reducing agents, reactions may vigorous causing heat and the formation of hydrogen gas. Avoid contact with metals such as aluminum.

**Hazardous Decomposition Products:** Thermal decomposition products are toxic.

**Hazardous Polymerization:** Not expected.

## 11. Toxicological Information

|                               |                           |
|-------------------------------|---------------------------|
| <b>Acute Exposure:</b>        | See Section 3.            |
| <b>Chronic Exposure:</b>      | See Section 3.            |
| <b>Exposure Limits:</b>       | See Section 2.            |
| <b>Irritancy:</b>             | See Section 3.            |
| <b>Sensitization:</b>         | See Section 3.            |
| <b>Carcinogenicity:</b>       | Information not available |
| <b>Teratogenicity:</b>        | Information not available |
| <b>Reproductive toxicity:</b> | Information not available |
| <b>Mutagenicity:</b>          | Information not available |
| <b>Synergistic products:</b>  | None known.               |

## 12. Ecological Information

**Environmental toxicity:** No data available.

**Biodegradability:** No data available.

## 13. Disposal Considerations

**Canadian Environmental Protection Act:** All ingredients are listed on the DSL. Dispose according to all local, provincial and federal requirements.

## 14. Transport Information

**Canadian Transportation of Dangerous Goods Regulations:** UN 3264, CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.(Hydrochloric acid, Phosphoric acid), Class 8, P.G.III

**International Air Transport Association (IATA):** UN 3264, Corrosive Liquid, Acidic, Inorganic, n.o.s.(Hydrochloric acid, Phosphoric acid) , Class 8, P.G.III

**International Maritime Organization (IMO):** UN 3264, Corrosive Liquid, Acidic, Inorganic, n.o.s.(Hydrochloric acid, Phosphoric acid) , Class 8, P.G.III, EmS No. F-A, S-B, Stowage Category "A", Clear of living quarters

## 15. Regulatory Information

### Canadian Federal Regulations:

**Canadian Environmental Protection Act:** All ingredients are on the Domestic Substances List.  
**WHMIS Classification:** E

## 16. Other Information

**Original Preparation Date:** February 23, 2002

**Prepared by:** Kel-Ex Agencies Ltd., 319 Lynn Avenue, North Vancouver, BC, Canada, V7J 2C4

**Disclaimer:** This Material Safety Data Sheet was prepared in accordance with criteria and requirements of the Hazardous Products Act and the Controlled Products Regulations using information provided by the manufacturer and other sources including CCINFO (Chemical Information published by the Canadian Centre for Occupational Health and Safety). The information in the Material Safety Data Sheet is offered for your consideration and guidance when exposed to this product. Canadian Building Restoration Products, Inc. expressly disclaims all expressed or implied warranties and assumes no responsibilities for the accuracy or completeness of the data contained herein. The data in this MSDS does not apply to use with any other product or in any other process.

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**Latest Issue Date:** August 17, 2011