



LEGION



## MANUFACTURERS & EXPORTERS OF REFRACTORIES

*Bricks & Shapes | Castables | Mortars | Ramming Mass | Ceramic Fiber*

**Regd. Address:** Legion Exim LLP, D/21, Galaxy Town Homes, Near Collector Office,  
Shroff Road, Rajkot, Gujarat 360001 – INDIA

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## PRODUCT DATA SHEET

**BRAND NAME:** ROYAL HEAT-A

### GENERAL PROPERTIES

**Service Temp (max.):** 1700°C

**Grain Size mm (max.):** 5

### CHEMICAL ANALYSIS

Al<sub>2</sub>O<sub>3</sub>: 92-95%

SiO<sub>2</sub>: 3-4%

Fe<sub>2</sub>O<sub>3</sub>: 0.5-0.8%

### PHYSICAL PROPERTIES

**Bulk Density (kg/m<sup>3</sup>)**

110°C/24 Hr Min.: 2800

**C.C.S (kg/cm<sup>2</sup>) min.**

110 °C / 24 Hrs: 600

800 °C / 3 Hrs: 410

1100 °C / 3 Hrs: 320

1500 °C / 3 Hrs: 650

**P.L.C. (%) @ 1500°C / 3 Hrs.: -0.80**

**Water requirement (%): 8-9**

**Mixing Time (minutes): 5-8**

**Shelf Life: 6 Months**

**Packaging:** 25 kgs HDPE-lined Kraft paper bags.

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**LEGION EXIM LLP**

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## MATERIAL SAFETY DATASHEET (MSDS)

(Prepared according to the Globally Harmonized System of Classification and Labelling of Chemicals – GHS Rev. 11, 2025)

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### 1. Identification

**Product name:** Royal Heat-A

**Other means of identification:** Ultra high-alumina refractory castable

**Recommended use:** Industrial refractory for furnaces, kilns, boilers, and incinerators.

**Use restrictions:** For industrial/professional use only. Not for domestic applications.

**Supplier:** Legion Exim LLP, Rajkot – Gujarat, India

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**Email (general inquiries):** trade@legionexim.com

**Emergency contact (24 h):** +91 91060 31803

### 2. Hazard Identification

**Classification according to GHS Rev. 11:**

- Not classified as hazardous under normal conditions of use.
- Contains **respirable crystalline silica (< 1 %)**, which may cause **lung damage through prolonged or repeated inhalation (STOT RE 1)**.

**Signal word:** *Danger*

**Hazard statements:**

- H372 – Causes damage to lungs through prolonged or repeated exposure (inhalation).

**Precautionary statements:**

- P260 – Do not breathe dust.
- P264 – Wash hands thoroughly after handling.
- P271 – Use only outdoors or in a well-ventilated area.
- P280 – Wear respiratory protection, gloves, and eye protection.
- P501 – Dispose of contents/container in accordance with local regulations.

**Other hazards:** Prolonged exposure to dust may cause mechanical irritation of the eyes, skin, and respiratory tract.

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**3. Composition / Information on Ingredients**

| Component   | CAS No.    | Approx. % | GHS Classification |
|---|------------|-----------|--------------------|
| Aluminium oxide (Al <sub>2</sub> O <sub>3</sub> ) | 1344-28-1  | 92-95     | Not classified     |
| Silicon dioxide (SiO <sub>2</sub> )               | 14808-60-7 | 3-4       | STOT RE 1 (lungs)  |
| Iron oxide (Fe <sub>2</sub> O <sub>3</sub> )      | 1309-37-1  | 0.5-0.8   | Not classified     |
| Other inert minerals and binders                  | —          | Balance   | Not classified     |

**4. First-Aid Measures**

- **Inhalation:** Move to fresh air. Seek medical attention if respiratory irritation persists.
  - **Skin contact:** Wash with soap and water. Remove contaminated clothing.
  - **Eye contact:** Rinse cautiously with water for several minutes; seek medical advice if irritation continues.
  - **Ingestion:** Rinse mouth; obtain medical advice if discomfort occurs.
- Most important symptoms:** Coughing, dryness of throat, irritation. Prolonged inhalation may cause silicosis.

**5. Fire-Fighting Measures**

The product is **non-flammable**.

**Suitable extinguishing media:** Water spray, CO<sub>2</sub>, dry chemical.

**Specific hazards:** None. Avoid breathing dust generated by fire debris.

**Protective equipment:** Use a self-contained breathing apparatus for dust exposure.

**6. Accidental Release Measures**

Avoid creating airborne dust.

Sweep or vacuum using equipment fitted with HEPA filters.

Avoid dry sweeping. Collect in sealed containers for disposal.

Wear a respirator and protective clothing. Prevent release to drains.

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**7. Handling and Storage**

**Handling:** Avoid dust generation. Use local exhaust or adequate ventilation.

**Storage:** Store in a cool, dry area away from moisture. Keep bags tightly closed.

**Hygiene:** Wash hands and face after handling. Do not eat, drink, or smoke while working.

**8. Exposure Controls / Personal Protection****Exposure limits (India / ACGIH):**

- Crystalline silica (Quartz): TWA 0.025 mg/m<sup>3</sup> (respirable).

**Engineering controls:** Provide ventilation or dust extraction.

**Personal protection:**

- Respiratory protection: N95 / P3 filter respirator for dust.
- Eye protection: Safety goggles.
- Skin protection: Gloves and protective clothing.

**9. Physical and Chemical Properties**

| Property          | Value                    |
|-------------------|--------------------------|
| Appearance        | Grey powder              |
| Odour             | Odourless                |
| pH (slurry)       | ≈ 10 – 12                |
| Melting point     | 1700 °C                  |
| Bulk density      | ≈ 2800 kg/m <sup>3</sup> |
| Water requirement | 8-9 %                    |
| Solubility        | Insoluble in water       |

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### 10. Stability and Reactivity

Stable under normal conditions.

**Avoid:** Moisture before use; formation of airborne dust.

**Decomposition products:** None known.

### 11. Toxicological Information

Not acutely toxic.

**Likely routes of exposure:** Inhalation of dust, skin and eye contact.

**Chronic effects:** Prolonged inhalation of respirable silica may cause lung fibrosis (silicosis).

**Carcinogenicity:** Crystalline silica – IARC Group 1 (carcinogenic to humans).

### 12. Ecological Information

Inorganic, insoluble material – non-toxic to aquatic life.

No bioaccumulation expected. Avoid large releases to the environment.

### 13. Disposal Considerations

Collect and dispose of as non-hazardous mineral waste in accordance with local regulations.

Do not dispose of into sewage systems. Packaging may be recycled after cleaning.

### 14. Transport Information

Not classified as dangerous under the UN Model Regulations.

**UN number:** Not applicable

**Transport hazard class:** Not applicable

**Packing group:** Not applicable

**Environmental hazard:** None

### 15. Regulatory Information

Complies with UN GHS Rev. 11 (2025) criteria.

Not subject to transport restrictions.

National and local chemical inventory registration may apply.

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**16. Other Information**

Prepared by: Legion Exim LLP, Rajkot – Gujarat, India

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This SDS is based on available data and current GHS guidelines. It does not constitute a product warranty.

Users must ensure safe handling and compliance with local laws.



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