 RHI MAGNESITA	<p align="center">MATERIAL SAFETY DATA SHEET (Nr.03)</p> <p align="center">according Regulation EC No. 1907/2006 (REACH), Regulation EC No. 1272/2008 (CLP) and Commission Regulation EU No. 2020/878</p>
	<p>Date of issue: 1. January 2006 Page: 1/10</p> <p>Date of revision: 10.02.2024 Rev: 10</p>
	<p>Product name: high alumina bricks (content Al₂O₃: 45-98%)</p> <p>Product group: OPATAL; RHIM-AM46, RHIM-AM48, RHIM-A48S, RHIM-A50K, RHIM-A50S, RHIM-A55K, RHIM-A55S, RHIM-A60K, RHIM-A60S, RHIM-A60BC, RHIM-A65K, RHIM-A65S, RHIM-A65K-P, RHIM-A70K, RHIM-A70KS, RHIM-A70BC, RHIM-A75K, RHIM-A80K, RHIM-A80KS, RHIM-A80BC, RHIM-A80KH, RHIM-A85K, RHIM-A85BC, RHIM-A90K, RHIM-A90KP, RHIM-A95K, RHIM-A60S-P, RHIM-A85BC, RHIM-OT60</p> <p>Product group: OPADUR; RHIM-A70ME, RHIM-A70MS, RHIM-A75ME, RHIM-A75MEG, RHIM-A85KZR, RHIM-A90KH</p> <p>Product group: OPATES; RHIM-ARS50, RHIM-ARS50N, RHIM-ARS55B, RHIM-ARS60, RHIM-ARS60N,</p> <p>Product group: OPATEX; RHIM-AS45, RHIM-AM48</p>
	<p>RHIM-S51, RHIM-C55, RHIM-S55, RHIM-S55b, RHIM-B60, RHIM-C61, RHIM-S61, RHIM-S60b, RHIM-C65, RHIM-S65, RHIM-B70, RHIM-C70, RHIM-M70, RHIM-C75, RHIM-M75, RHIM-B80, RHIM-C80, RHIM-C85, RHIM-C90, RHIM-F45, RHIM-F46, RHIM-F48, RHIM-F47, RHIM-F48, RHIM-F49, RHIM-F50, RHIM-F50v, RHIM-F55bhv, RHIM-SiCF5, RHIM-SiCF25, RHIM-SiCF15</p>

SECTION 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier:

Product name: High – Alumina Fireclay Bricks (Al₂O₃ content 45 – 98 %)

CAS no: n/a (mixture)

EC (EINECS) no: n/a (mixture)

Index no: n/a (mixture)

REACH registration no: N/A for mixtures

Other names: None.

1.2 Relevant identified uses of the substance or mixture and uses advised against:

Building industry – masonry lining of walls, vaults and other parts of thermal aggregates.

1.3 Details of the supplier of the safety data sheet

Manufacturer: RHI MAGNESITA GMBH

Address: KRANICHBERGGASSE 6, 1120 VIENNA

Phone: +43502130, Fax: +43502136213

Email address of competent person responsible for material safety data sheet:

msds@rhimagnesita.com

1.4 Emergency telephone number:

Toxicological information centre +420 224919293, 224915402

Na Bojišti 1, 128 08 PRAGUE 2

SECTION 2. HAZARD IDENTIFICATION

2.1 Classification of substance or mixture:

The product is not classified as hazardous pursuant to Regulation of the European Parliament and of the Council (EC) no 1272/2008 CLP.

2.2 Label elements:

The product is not subject to compulsory identification.

2.3 Other hazards:

None are specified

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Sunstances:

Not to be completed

3.2. Mixtures:

Moulded dense refractory material based on aluminium-silicates with ceramic bond created by sintering at temperatures higher than 800°C. Fireclay with non-fibrous alumina content over 45 % (CAS: 1344-28-1, EC: 215-691-6), 0-10% of silicon dioxide – silica (CAS: 14808-60-7, EC:238-878-4) and 0–5% of cristobalite (CAS: 14464-46-1, EC: 238-455-4).

Substances dangerous for health or the environment:



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The product does not contain substances classified as dangerous in the sense of Act no 350/2011 Coll., or in the sense of Dangerous Preparation Directive (1999/45/EC) or Regulation of the European Parliament and of the Council (EC) no. 1272/2008 CLP.

Substances with workplace exposure limits:

Does not contain any in the solid state, otherwise see data in 8.1.

Persistent, bio-accumulative and toxic, highly persistent and highly bio-accumulative substances:

The product does not contain PBT and vPvB type substances.

SECTION 4. FIRST AID MEASURES

4.1 Description of first aid measures:

4.1.1 First aid instructions:

General instructions: Dust resulting from cutting, grinding, breaking etc. mainly consists of a mixture of aluminium-silicates. Exposure to dust particles may cause irritation of eyes and upper respiratory tract. Dust particles may contain a small amount of crystalline silicon dioxide.

Immediate medical attention is not necessary.

Inhalation: Move the exposed person to the fresh air. Rinse the oral cavity with water and clear the nose to remove the inhaled dust.

Skin contact: First aid not needed, observe routine personal hygiene practice.

Eye contact: Wash with plenty of lukewarm water. After rinsing use a suitable eye lotion. Wash the eye surroundings with water too. In the case of eye injury seek medical attention.

Ingestion: Never evoke vomiting in unconscious person! Do not serve drinks to unconscious person! Rinse the mouth with water carefully, drink a couple of glasses of water.

- 4.1.2 Additional data:
- a) Immediate medical attention is recommended in the case of swallowing.
 - b) In the case of inhalation moving the exposed person to fresh air is recommended.
 - c) Remove contaminated parts of clothing.
 - d) Recommended personal protective means to persons providing first aid: See section 8

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

Respiratory tract irritation.

Exposed eye irritation.

Temporary irritation of the digestive tract after swallowing the dust.

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

Visit a doctor in the case of nausea.

SECTION 5. FIRE-FIGHTING MEASURES

5.1 Extinguishing media: **Suitable:** Non-flammable. Packaging material used may be flammable, use appropriate extinguishing agent depending on the surrounding fire.

Non-suitable: None are specified.

5.2 Special hazards arising from the substance or mixture: None are known.

5.3 Advice for fire-fighters: Use equipment depending on the surrounding fire. Non-flammable material.

SECTION 6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures:

6.1.1 For non-emergency personnel:

Restrict unauthorised access to the exposed area until emergency elimination. In the case of large leaks secure the area against unauthorised access.

6.1.2 For emergency responders:

Prevent further dust spread through the air. In the case of dusty environment use personal protective equipment (see section 8). Other special precautions are not necessary.

6.2 Environmental precautions: No acute negative effects on the environment. Prevent further dust spread through the air. Place the devalued product in specified waste collection containers.

6.3 Methods and materials for containment and cleaning up: Sweep up the spilled product and place in specified waste collection containers. Prevent excessive dust formation during cleaning. Other special precautions are not necessary.

6.4 References to other sections: Personal protective equipment – section 8.

Waste disposal – section 13.



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SECTION 7. HANDLING AND STORAGE**7.1 Precautions for safe handling:****7.1.1 Particular recommendations:** Prevent excessive (undesirable) dust formation during handling.**7.1.2 General hygienic instructions for work:** Use personal protective equipment where necessary. Other special precautions are not necessary.**7.2 Conditions for safe storage, including any incompatibilities:** Store in a dry place. Prevent dust formation. Storage limits: None are specified.**7.3 Specific final application requirements:** No other requirements and instructions except for the data included in section 1.2.**SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION****8.1 Control parameters:** Governed by Government Regulation no 361/2007 Coll., stipulating conditions of occupational health protection, as amended, Annex 3:

No hygienic limits are specified for the product. Due to the nature of the mixture the following values may be applied:

For dust with prevailing fibrogenic effect:

Substance	PEL _r (mg.m ⁻³) (respirable fraction)	PEL _c (mg.m ⁻³) (total concentration)
Silica, cristobalite	0,1	--
Substance	PEL (mg.m ⁻³) F _r ≤ 5% F _r > 5%	PEL _c (mg.m ⁻³)

Other silicates

2,0

10 : F_r

10

(F_r = respirable fraction)

For dust with potential fibrogenic effect:

Substance	PEL _c (mg.m ⁻³) (total fraction)
Amorphous SiO ₂	4,0
For dust with prevailing non-specific effect	
Substance	PEL (mg.m ⁻³)
Aluminium and its oxides (except for gamma Al ₂ O ₃)	10

8.2 Exposure controls:**8.2.1 Appropriate technical controls:** Ventilation – Where dust content in the air may be controlled with technical engineering (local exhaust, ventilation etc.)**8.2.2 Individual protective measures such as personal protective equipment:**

Hygienic conditions: Prevent eye contact, do not inhale.
Do not stay in places with higher dust concentrations without cause
Observe routine personal hygiene before eating, drinking, toilet use and after work.

Personal protective equipment:**Eye and face protection:** Use protective goggles with side pieces in the places of excessive dust formation.**Skin – hand protection:** Protective work gloves (for example leather).**Skin – other protection:** Work clothes and boots.**Respiratory tract protection:** In the case of exceeded NPK (exposure limit) use a respirator with filter against fibrogenic dust**Thermal hazard:** N/A**8.2.3 Environmental exposure controls:**

Prevent flying dust during cutting, grinding, breaking etc.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

The information relates to mixture.

9.1 Information about basic physical and chemical properties

a) Physical state: Solid state – refractory moulded products,



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b) Colour:	Different colours.
c) Odour:	None
d) Melting point/freezing point:	Not specified.
e) Boiling point or initial boiling point and boiling range:	Not specified.
f) Flammability (solid, gas)	Non-flammable.
g) Lower and upper explosion limit values:	
h) Flash point:	Non-flammable.
i) Auto-ignition temperature:	Non-flammable.
j) Decomposition temperature	Not specified.
k) Ph:	6 - 8
l) Kinematic viscosity:	Not specified.
m) Solubility:	Non-soluble
n) Partition coefficient: n-octanol / water (logarithmic value):	Not specified.
o) Vapour pressure:	Not specified.
p) Density and/or relative density	2,0 – 2,7 g/cm ³ (bulk density)
r) Relative vapour density	Not specified.
s) Particle characteristics (solids)	Not specified.
t) Evaporation rate:	Not specified.
t) Decomposition temperature:	Not specified.
u) Explosive properties:	None.
v) Oxidising properties:	0% (according to definition of the air protection act)None.

9.2. Other information

Solvent content (VOC)

9.2.1 Information with regard to physical

hazard classes None

9.2.2 Other safety characteristics None

Note:

"Not specified": irrelevant for the product

"None": not available for the product.

SECTION 10. STABILITY AND REACTIVITY

10.1 Reactivity: No decomposition under appropriate storage and use conditions.

10.2 Chemical stability: The product is stable under normal conditions.

10.3 Possibility of hazardous reactions: None.

10.4 Conditions to avoid: None.

10.5 Incompatible materials: None.

10.6 Hazardous decomposition products: None.

SECTION 11. TOXICOLOGICAL INFORMATION

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

a) Acute toxicity

Ways of entry to organism: No acute or chronic effects when entering through common ways of entry.

Acute toxicity:

- LD₅₀, oral, rat (mg.kg⁻¹): not specified
- LD₅₀, dermal, rat or rabbit (mg.kg⁻¹): not specified
- LC₅₀, inhalation, rat, for aerosols or particles (mg.kg⁻¹): not specified
- LC₅₀, inhalation, rat, for gases and vapours (mg.kg⁻¹): not specified

b) Skin corrosion/irritation

Not classified.

c) Serious eye damage/irritation

Not classified.



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d) Respiratory or skin sensitisation

Not classified.

e) Germ cell mutagenicity

Not classified.

f) Carcinogenicity

Not classified.

g) Reproductive toxicity

Not classified.

h) STOT-single exposure

Not classified.

i) STOT-repeated exposure

Not classified.

j) Aspiration hazard

Not classified.

11.2 Information on other hazards

11.2.1 Endocrine disrupting properties

They are not available.

11.2.2 Other information

The product may contain crystalline silica. Product dust inhalation is considered a source of minimum risk of lung fibrosis (silicosis). Chronic obstructive lung disorder is only suspected after very long exposition times (years) under exposure concentrations exceeding the permitted limits. Carcinogenicity of cristobalite for humans has not been unambiguously proved.

SECTION 12. ECOLOGICAL INFORMATION

12.1 Toxicity for aqueous organisms: A natural material by origin, no assumed toxic effects on aqueous organisms.

12.2 Persistence and degradability: The product is inert and does not degrade.

12.3 Bioaccumulation potential: Data not available.

12.4 Mobility in soil: Data not available.

12.5. Results of PBT and VPvB assessment: Not required.

12.6. Endocrine disrupting properties: Data not available.

12.7. Other unfavourable effects: The product is inert and other potential negative effects are connected with mechanical effects of dust formation.

SECTION 13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods: Dumping on specified dumps. Disposal by release to sewerage: Excluded by the product nature. Waste classification according to Decree 93/2016 Coll. (Waste Catalogue):

10 12 08 Waste ceramic goods, bricks, tiles and construction materials (after thermal processing), cat. O.

13.2 Methods of contaminated waste disposal: According to the nature of package construction material the waste is classified in group 15 01 Packaging materials (including separately collected communal waste packaging materials), cat. O. Empty package without content residues may be disposed of by procedures dictated by the construction material of the package (repurchase, recycling, dumping, incineration).

13.3 Waste legislation: European waste catalogue
Decree no 93/2016 Coll. (Waste Catalogue)
Decree no 383/2001 Coll. on waste Disposal Details

SECTION 14. TRANSPORT INFORMATION

14.1 UN no:

Not subject to regulations for dangerous object transport.

14.2 UN proper shipping name:

Not subject to regulations for dangerous object transport.

14.3 Transport hazard class(es):


Not subject to regulations for dangerous object transport.

14.4 Packing group:

Not subject to regulations for dangerous object transport.

14.5 Environment hazards:

Not subject to regulations for dangerous object transport.

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14.6 Special precautions for users:

Not subject to regulations for dangerous object transport.

14.7 Bulk transport according to Annex II MARPOL 73/78 and IBC regulation:

Not subject to regulations for dangerous object transport.

SECTION 15. REGULATORY INFORMATION

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

Relevant legislation European Union:

- Regulation (EC) No 1907/2006 of the European Parliament and of the ,concerning the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH)
- Regulation EC No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006
- Commission Regulation (EU) 2015/830 of 28 May 2015 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)
- Commission Directive 2000/39/EC of 8 June 2000 establishing a first list of indicative occupational exposure limit values in implementation of Council Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work
- Commission Directive 2006/15/EC of 7 February 2006 establishing a second list of indicative occupational exposure limit values in implementation of Council Directive 98/24/EC and amending Directives 91/322/EEC and 2000/39/EC
- Commission Directive 2009/161/EU of 17 December 2009 establishing a third list of indicative occupational exposure limit values in implementation of Council Directive 98/24/EC and amending Commission Directive 2000/39/EC
- Commission Directive (EU) 2017/164 of 31 January 2017 establishing a fourth list of indicative occupational exposure limit values pursuant to Council Directive 98/24/EC
- European Waste Catalogue
- Council Directive 1999/13/EC of 11 March 1999 on the limitation of emissions of volatile organic compounds due to the use of organic solvents in certain activities and installations
- Regulation (EU) No 528/2012 of the European Parliament and of the Council of 22 May 2012 concerning the making available on the market and use of biocidal products Text with EEA relevance


15.2 Chemical safety assessment

There are no available data for assessment of safety of chemical substances for this material.

SECTION 16. OTHER INFORMATION

Data on amendments and revisions:

Rev. no	Date	Amendment description
1.	05 Nov 2007	Change of structure and form of the whole material safety data sheet according to Annex II to Regulation of the European Parliament and of the Council (EC) no 1907/2006 (REACH)
2.	20 Nov 2012	Periodic revision
3.	19 Aug 2013	Overall reformulation of SPC in compliance with the effective Annex II to Regulation (EC) no 1907/2006
4.	01.June 2015	Adding qualities

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5.	14.March 2017	Adding qualities
6.	08.Aug.2017	Modification of the heading, Sec. 3, 14, 15, in compliance with Commission (EU) Directive No. 2015/830, regulation update
7.	28.Febr.2020	Quality updates
8.	01.Apr.2022	Quality updates
9.	27.Sept.2022	Modification of SDS according to Commission Regulation EU 2020/878. Update of legal regulations.
10.	10.02.2024	New logo, change of quality names, change of section 1.3

Important literature references and data sources: Data contained in this material safety data sheet were compiled from materials of the manufacturer and on the basis of effective CR and EU legislation.

In the case of mixture information about which information evaluation method according to Article 9 of Regulation (EC) no 1272/2008 was used for classification purposes:
 Approximation according to hazards of components and physical nature of product.

List of relevant standard hazard statements and instructions for safe handling. The full text of all instructions, the full text of which is not given in sections 2 to 15:
 None are included.

Instructions concerning all training courses for staff responsible for human health and environment protection:
 Staff should be informed about the principles of work with the product and required personal protective equipment in the context of regular OHS training.

Recommended limitations for use: Use exclusively for purposes specified by the manufacturer.

Other information: This safety data sheet is issued by RHI Magnesita Czech Republic, a.s Velké Opatovice on request of customer. Regulation (EC) no 1907/2006 on Registration, Evaluation, Authorisation & Restriction of Chemicals and on Establishment of European Chemical Agency, as amended (REACH) does not apply to the product in question.

The above data describe exclusively safety requirements for products and are based on current knowledge. They do not describe product properties in the sense of quality parameters and legislative regulations for warranty compliance.

End of safety data sheet.