

<p>P-D Refractories CZ a.s.</p>  <p>Nádražní 218 679 63 Velké Opatovice</p>	<p align="center">MATERIAL SAFETY DATA SHEET (Nr.25c) according to the Regulation of the European Parliament and Council Regulation (EC) no. 1907/2006 (REACH), as amended by Commission Regulation (EU) No. 2015/830</p> <table border="1"> <tr> <td>Date of issue: 1 January 2006</td><td>Page: 1/6</td></tr> <tr> <td>Revision date: 03.January 2020</td><td>Rev.: 6</td></tr> <tr> <td colspan="2">Product name: Refractory mastic</td></tr> <tr> <td colspan="2">Product group: RUDOKIT</td></tr> <tr> <td colspan="2">Quality class: SK 60-04NV, SK 80-04 NV</td></tr> </table>	Date of issue: 1 January 2006	Page: 1/6	Revision date: 03.January 2020	Rev.: 6	Product name: Refractory mastic		Product group: RUDOKIT		Quality class: SK 60-04NV, SK 80-04 NV	
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SECTION 1. SUBSTANCE/MIXTURE AND MANUFACTURER IDENTIFICATION

1.1 Product identifier:

Business name: Refractory mastic

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 Designed applications of substance or mixture and non-recommended applications:

Building industry – refractory mastic with a chemical binding agent. It is designed for masonry work and sealing refractory and fibrous materials and for forming a levelling or protective layer

Not recommended for: Not applicable.

1.3 Detailed data of material safety data sheet supplier:

Manufacturer: P-D Refractories CZ a.s.

Address: Nádražní 218, 679 63 Velké Opatovice

Phone: +420 516 493 111, Fax: +420 516 477 338

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

Milan.Mazura@pd-group.com

1.4 Emergency phone:

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 Dangerous Preparation Directive (1999/45/EC) nor pursuant to Regulation of the European Parliament and of the Council (EC) no 1272/2008 CLP.

2.2 Identification elements:

The product is not subject to compulsory identification.

2.3 Other hazards:

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

Results of PBT and vPvB:

The product does not contain PBT and vPvB.

The mixture does not meet the criteria for PBT or vPvB in accordance with Annex XIII of Regulation 1907/2006 / EC the constituents are not listed on the Candidate List of substances of very high concern (SVHC).

SECTION 3. COMPOSITION/COMPONENT INFORMATION

3.1. Substances:

Not applicable.

3.2. Mixes:

Wet refractory mastic with water glass based on a refractory grog that is self-setting in air. Plastic mastic with a chemical binding agent comprising of 25-45% non-fibrous aluminium oxide (CAS: 1344-28-1, EC: 215-691-6), 0-30% silicon dioxide - quartz (CAS: 14808-60-7, EC: 238-878-4), 0-5% cristobalite (CAS: 14464-46-1, EC: 238-455-4).

Substances dangerous for health or the environment - potentially dangerous component:

Name of component	Concentration % mass	CAS EC Index number Registration number	Classification according to 1272/2008/EC
Silicic acid, sodium salt (sodium water glass)	SK60-04NV: ≤7,8 %*) SK80-04NV: ≤6,8 %*)	1344-09-8 215-687-4 Not given Not given	According to the supplier's classification the component is not hazardous

*) expressed as active ingredient content of additive

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Substances with workplace exposure limits:

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

SECTION 4. FIRST AID INSTRUCTIONS

4.1 First aid description:

4.1.1 First aid instructions:

General instructions: Immediate medical attention is required in case of ingestion or contact with eyes.

Observe rules of work hygiene when working with this material. When working it is necessary to limit direct contact of the skin and mucous membranes of workers to a minimum. In the case of severe symptoms seek medical advice.

Inhalation: This pathway into the organism is unlikely.

Skin contact: Remove the exposed person away from the source of contamination. Remove contaminated clothing and boots, clean both before further use. Quickly and carefully wash the exposed skin with warm water and soap or other skin cleansing agents and treat with a suitable cream.

Eye contact: Wash out immediately with lukewarm water for at least 15 minutes whilst forcing the eye open. After rinsing use a suitable eye lotion. Wash the eye surroundings with water too. Seek medical attention, continue flushing until treatment is administered.

Swallowing: Never evoke vomiting in unconscious person! Do not serve drinks to unconscious person! Get medical help immediately. Rinse mouth thoroughly with water. Drink several glasses of water or milk if immediately available.

4.1.2 Additional data: a) Immediate medical attention is required in case of ingestion or contact with eyes
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 Major acute and delayed symptoms and effects:

The mastic is in a plastic state. It does not cause respiratory irritation.

It may cause skin irritation.

Exposed eye irritation.

A burning sensation in the mouth upon ingestion. Gastrointestinal symptoms include nausea, vomiting.

4.3 Instruction concerning immediate medical attention and special treatment:

Visit a doctor in the case of nausea.

SECTION 5. FIRE-FIGHTING MEASURES

5.1 Extinguishing agents: **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 following from the substance or mixture: None are known.

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

SECTION 6. PRECAUTIONS IN CASE OF ACCIDENTAL LEAK

6.1 Precautions for personnel protection, protective means and emergency procedures:

6.1.1 For staff except for emergency intervention staff

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 intervention staff:

Prevent further dust spread through the air. Use personal protective equipment (see section 8). Other special precautions are not necessary.

6.2 Environment protection measures: 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 leak minimisation and cleaning: Spilled product should be placed in designated waste containers. 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. STORAGE AND HANDLING

7.1 Precautions for safe handling:

7.1.1 Particular recommendations: Prevent leakage of product 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: Store in a dry place. 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 LIMITATIONS/PERSONAL PROTECTIVE EQUIPMENT

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 fraction)
Quartz, cristobalite	0,1	--
Substance	PEL (mg.m ⁻³) F _r ≤ 5% F _r > 5%	PEL _c (mg.m ⁻³)
Other silicates (F _r = respirable fraction)	2.0 10 : F _r	10

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 limitations:

8.2.1 Appropriate technical controls: Ventilation – Where dust content in the air may be controlled with technical methods (local exhaust, ventilation etc.)

8.2.2 Individual protective measures including 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 Limitations of environment exposure:

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) Appearance Solid state – wet mix with a granularity below 0.5 mm, grey colour.

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b) Odour	None.
c) Odour threshold	Not specified.
d) pH	11
e) Melting / solidification point	Not specified.
f) Initial boiling point and range	Not specified.
g) Ignition point	Non-flammable.
h) Evaporation speed	Not specified.
i) Flammability (solid subst., gas)	Non-flammable.
j) Upper/lower limit of flammability or explosiveness	Not specified.
k) Vapour pressure	Not specified.
l) Vapour density	Not specified
m) Relative density	2.5 – 2.8 g/cm ³ (bulk density)
n) Solubility	Non-soluble
o) Differentiation coefficient: n-octanol/water	Not specified.
p) Self-ignition temperature	Non-flammable.
q) Decomposition temperature	Not specified.
r) Dynamic viscosity	Not specified.
s) Explosive properties	None.
t) Oxidisation properties	None.
9.2. Other information	
Solvent content (VOC)	0% (according to definition of the air protection act)
Note:	
"Not specified": irrelevant for the product	
"None": not available for the product.	

SECTION 10. STABILITY AND REACTIVITY

<u>10.1 Reactivity:</u>	No decomposition under appropriate storage and use conditions.
<u>10.2 Chemical stability:</u>	The product is stable under normal conditions.
<u>10.3 Possible dangerous reactions:</u>	Reaction with strong acids.
<u>10.4 Conditions to be avoided:</u>	None.
<u>10.5 Incompatible materials:</u>	Strong acids.
<u>10.6 Dangerous decomposition products:</u>	None.

SECTION 11. TOXICOLOGICAL INFORMATION

11.1 Information about toxicological effects:

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

a) 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

Swallowing: Not specified.

b) skin corrosion/irritation: Irritant.

c) serious eye damage/irritation: Can cause rapid eye damage.

d) Sensitisation of respiratory tract / skin: Not classified.

e) Mutagenicity in embryonic cells: Not classified.

f) Carcinogenicity: Not classified.

g) Toxicity for reproduction: Not classified.

h) Toxicity for specific target organs – single exposition: Not classified.

i) Toxicity for specific target organs – multiple expositions: Not classified.

j) Dangers on inhalation: The dry form can irritate. Not classified

Other information: The product may contain crystalline quartzite. Product dust inhalation is considered a

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

SECTION 13. DISPOSAL INSTRUCTIONS

13.1 Methods of waste disposal: 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 01 Waste ceramic material before 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: Act no 185/2001 Coll., on Waste
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 Official (UN) shipping name:

Not subject to regulations for dangerous object transport.

14.3 Class/classes of dangers for transport:

Not subject to regulations for dangerous object transport.

14.4 Package group:

Not subject to regulations for dangerous object transport.

14.5 Environment hazards:

Not subject to regulations for dangerous object transport.

14.6 Special safety 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 Regulations concerning safety, health and environment/specific legislation concerning substance or mixture

Act no 254/2001 Coll. on Waters (Water Act), as amended

Act no 185/2001 Coll., on Waste, as amended

Act no 201/2012 Coll., on Air Protection

Act no 258/2000 Coll., on Public Health Protection, as amended

Act no 350/2011 Coll. of 27 October 2011 on Chemical Substances and Mixtures and on amendment to certain other acts (Chemical Act)

Government Regulation no 361/2007 Coll., as amended, stipulating conditions for occupational health, including PEL and NPK exposure limits (see 8 above).

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Regulation (EC) no 1907/2006 on Registration, Evaluation, Authorisation & Restriction of Chemicals and on Establishment of European Chemical Agency, as amended (REACH).

Regulation (EC) no 1272/2008 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 on amendment of Regulation (EC) no 907/2006 (CLP)

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.	6 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 Jun 2012	Periodic revision of the document
3.	21 Aug 2013	Overall reformulation of MSDS in compliance with the effective Annex II to Regulation (EC) no 1907/2006
4.	26 Sep 2014	SILATERM quality class added to MSDS
5.	14 Dec 2015	Modifications to the wording the titles of the subsections in accordance with Commission Regulation (EU) no. 2015/830. Review of quality groups pertaining to the MSDS depending on the product's constituents. Changes are reflected in the subsections: Header, 1.2, 2.1, 2.2, 2.3, 3.1, 3.2, 11.1, 14.1, 14.2, 15.1, 16.
6.	3.Jan.2020	Updates to Chapters 1.3, 15.1, 16

Important literature references and data sources: Data contained in this material safety data sheet were compiled from materials of the manufacturer, according to the documents of the supplier of the item "water glass 36/38 sodium silicate container 1000 lt" and on the basis of the laws in force in the CR and the EU.

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 phrases and instructions for safe use. Full wording of all phrases and instructions not included in sections 2 to 15:

None are included.

Instructions concerning all training courses for staff responsible for human health and environment protection:

Include instructions about working with the product in the occupational safety training system (inaugural training, training in the workplace, repeated training) according to the specific conditions in the workplace.

Recommended limitations for use:

Use exclusively for purposes specified by the manufacturer..

The following recommendations should be preserved when handling the product. For the sake of unification the recommendations are formulated in the form of P-phrases (Instructions for safe handling):

P260 Do not inhale dust

P262 Avoid contact with eyes, skin or clothing.

P302+P352 DURING SKIN CONTACT: Wash with plenty of soap and water.

P280 Wear protective gloves / protective clothing / eye protection / face protection.

Other information:

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 material safety data sheet.