

<b>P-D Refractories CZ a.s.</b>  Nádražní 218 679 63 Velké Opatovice	<div style="text-align: center;"> <b>SAFETY DATA SHEET (Nr.20)</b>          according Regulation EC No. 1907/2006 (REACH), Regulation EC No. 1272/2008 (CLP)          and Commission Regulation EU No. 2020/878       </div> <div>         Date of issue: 1 January 2006          Revision date: 15.12.2022       </div> <div style="text-align: right;">         Page: 1/8          Rev.: 11       </div> <div>         Product name: <b>Refractory mastic</b>          Product group: OPAMAT, Quality class: <b>RUDOMAL KV, KVP, KVLP</b>          QUARZKIT: Quality class: <b>MS90LS</b> </div>
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## SECTION 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

### 1.1 Product identifier:

**Product 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.

CLP unique formula identifier (UFI): **3R10-X0A9-S004-1XDF**

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

Building industry – bonding chimney liners and acid-resistant fireclays.

### 1.3 Details of the supplier of the safety data sheet:

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:

Classification according to European Parliament and Council Regulation (EC) no. 1272/2008 CLP:

Skin Irrit 2: skin corrosion/irritation, Cat. 2

H315 Causes skin irritation.

Eye Dam. 1 serious eye damage / eye irritation, Cat. 1

H318 Causes serious eye damage.



STOT SE 3 Toxicity for specific target organs - single exposure, Cat. 3

H335 May cause respiratory irritation.

STOT RE 1: Toxicity for specific target organs - repeated exposure, Cat. 1

H372 Causes lung damage through prolonged or repeated exposure through inhalation.

### 2.2 Identification elements:

<b>Hazard pictograms:</b>	 GHS05	 GHS08
<b>Contains:</b>	Danger	
<b>Signal word:</b>	Sodium silicate (EC: 215-687-4), Quartz - SiO <sub>2</sub> (respirable fraction)	
<b>Hazard statements:</b>	H315 Causes skin irritation. H318 Causes serious eye damage. H335 May cause respiratory irritation. H372 Causes lung damage through prolonged or repeated exposure through inhalation..	
<b>Precautionary statements</b>	P260 Do not inhale dust P280 Wear protective gloves / protective clothing / eye protection / face protection. P284 [In case of inadequate ventilation] wear respiratory protection P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing. P310 Immediately call a POISON CENTRE or doctor/physician. P501 Dispose of contents / container by forwarding to facilities approved for waste disposal.	

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<b>Other required labeling:</b>	Not applicable.
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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/INFORMATION ON INGREDIENTS

3.1. Substances:  
 Not applicable.  
3.2. Mixtures:  
 Dry mixtures based on synthetic grogs and quartzite sand with a chemical binder and a hardener based on aluminium phosphate. It contains 15-25% non-fibrous aluminium oxide (CAS: 1344-28-1, EC: 215-691-6) and 70-80% silicon dioxide – quartzite sand (CAS: 14808-60-7, EC:238-878-4).  
Substances dangerous for health or the environment:

Name of component	Concentration % mass	CAS EC Index number Registration number	Classification according to 1272/2008/EC
Quartz (SiO <sub>2</sub> ) (micronized Střeľeč sand)	Rudomal KV (KVLP), KVP: < [25,2 – 27,3]*)	14808-60-7 238-878-4 Not given Not subject to registration	STOT RE 1: Toxicity for specific target organs - repeated exposure, Cat. 1 H372: Causes damage to lungs through prolonged or repeated exposure through inhalation.
Silicic acid, sodium salt (LITHOPIX S2)	10	1344-09-8 215-687-4 Not given 01-2119448725-31- XXXX	Skin Irrit 2: skin corrosion/irritation, Cat. 2 H315 Causes skin irritation. Eye Dam. 1 serious eye damage / eye irritation, Cat. 1 H318 Causes serious eye damage. STOT SE 3 Toxicity for specific target organs - single exposure, Cat. 3 H335 May cause respiratory irritation.**)

\*) Expressed as respirable fraction content  
 \*\*) Component supplier's classification

Substances with workplace exposure limits:  
 Does not contain any in the solid state, otherwise see data in 8.1.

Specific concentration limit or a multiplication factor  
Acute toxicity estimation  
 They are not specified for the components of the mixture.

### SECTION 4. FIRST AID INSTRUCTIONS

4.1 First aid description:  
4.1.1 First aid instructions:  
General instructions: The resulting dust in increased quantities may irritate mucous membrane, conjunctiva and the respiratory tract. Observe rules of work hygiene when working with this material. In the case of

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severe symptoms seek medical advice.

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:** 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 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.

It may cause skin irritation.

Exposed eye irritation.

Temporary irritation of the digestive tract including gastric nausea and sickness 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.

**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 end uses:** No other requirements and instructions except for the data included in section 1.2.

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## 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 prevailingly fibrogenic effect:

Substance	PEL <sub>r</sub> (mg.m <sup>-3</sup> ) (respirable fraction)	PEL <sub>c</sub> (mg.m <sup>-3</sup> ) (total fraction)
Quartz, cristobalite	0,1	--
Substance	PEL (mg.m <sup>-3</sup> ) F <sub>r</sub> ≤ 5%    F <sub>r</sub> > 5%	PEL <sub>c</sub> (mg.m <sup>-3</sup> )

Other silicates (F <sub>r</sub> = respirable fraction)	2.0    10 : F <sub>r</sub>	10
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For dust with potential fibrogenic effect:

Substance	PEL <sub>c</sub> (mg.m <sup>-3</sup> ) (total fraction)
Amorphous SiO <sub>2</sub>	4.0
For dust with prevailingly non-specific effect	
Substance	PEL (mg.m <sup>-3</sup> )
Aluminium and its oxides (except for gamma Al <sub>2</sub> O <sub>3</sub> )	10

### 8.2 Exposure controls:

**8.2.1 Appropriate engineering controls:** Ventilation – Where dust content in the air may be controlled with technical methods (local exhaustion, 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 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 – A powdery mixture with grain size below 0,5 mm
b) Colour:	Grey
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:	

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h) Flash point:	Non-flammable.
i) Auto-ignition temperature:	Non-flammable.
j) ) Decomposition temperature	Not specified.
k) Ph:	11
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	2.7 g/cm <sup>3</sup> (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:	None.

## 9.2. Other information

Solvent content (VOC) 0% (according to definition of the air protection act)

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:	Reaction with strong acids.
10.4 Conditions to avoid:	None.
10.5 Incompatible materials:	Strong acids.
10.6 Hazardous decomposition products:	None.

## SECTION 11. TOXICOLOGICAL INFORMATION

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

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

#### a) Acute toxicity:

- LD<sub>50</sub>, oral, rat (mg.kg<sup>-1</sup>): not specified
- LD<sub>50</sub>, dermal, rat or rabbit (mg.kg<sup>-1</sup>): not specified
- LC<sub>50</sub>, inhalation, rat, for aerosols or particles (mg.kg<sup>-1</sup>): not specified
- LC<sub>50</sub>, inhalation, rat, for gases and vapours (mg.kg<sup>-1</sup>): 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: May cause respiratory irritation.

i) Toxicity for specific target organs – multiple expositions:

This product contains respirable quartz as an impurity and therefore is classified as STOT RE 2 according to the

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criteria defined in EC Regulation 1272/2008. Prolonged or excessive inhalation of respirable crystalline quartzite dust may cause pulmonary fibrosis, which is nodular pulmonary fibrosis caused by the deposition of fine respirable particles of crystalline quartzite in the lungs.

In 1997, the IARC (International Agency for Research on Cancer) concluded that crystalline quartzite inhaled from occupational sources can cause lung cancer in humans. It stressed, however, that not all industrial circumstances, nor all types of crystalline quartzite can be blamed. (Monograph IARC risk evaluation of cancer in humans caused by chemicals, silicon, quartzite powder and organic fibres, 1997, Vol 68, IARC, Lyon, France). In June 2003, the EU Scientific Committee on Occupational Exposure Limits to chemical agents (SCOEL) concluded that the main result of inhaling respirable crystalline quartzite dust in humans is silicosis. "There is sufficient information to conclude that the relative lung cancer risk is increased in persons with silicosis (and apparently, not in employees without silicosis exposed to quartzite dust in quarries and in the ceramic industry). Therefore, preventing the onset of silicosis will also reduce the cancer risk...." (SCOEL SUM Doc 94-final, June 2003).

Thus, there is evidence supporting the fact that increased cancer risk is limited to persons who are already suffering from silicosis. Protection of workers from silicosis should be assured by respecting the existing exposure limits at work and using additional risk management measures where required (see section 16 below).

j) Dangers on inhalation: The dry form can irritate.

#### 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 quartzite. 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 Waste Catalogue:

10 12 01 Waste ceramic material before thermal processing, cat. non-hazardous waste.

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. non-hazardous waste. 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


### **SECTION 14. TRANSPORT INFORMATION**

14.1 UN number or ID number: -

Not subject to regulations for dangerous object transport.

14.2 UN proper shipping name:



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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 Environmental hazards:

Not subject to regulations for dangerous object transport.

14.6 Special precautions for users:

Not subject to regulations for dangerous object transport.

14.7 Maritime transport in bulk according to IMO instruments:

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 Council 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	18 Feb 2005	This material safety data sheet replaces the material safety data sheet of September 11, 2003. Major changes: - Sect. 2 - Information on the composition of the substance or preparation: Use of aluminium phosphate hardener, which is not classified as a hazardous substance, instead of sodium fluorosilicate. - Modification of content and structuring of material safety data sheet under new regulations

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2	1 Feb 2006	This material safety data sheet replaces the material safety data sheet of February 18, 2005. Major change: graphical update of material safety data sheet.
3	06 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)
4.	01 Nov 2008	Material safety data sheet expanded for new product RUDOMAL KV P
5.	20 Nov 2012	Periodic revision
6.	21 Aug 2013	Overall reformulation of MSDS in compliance with the effective Annex II to Regulation (EC) no 1907/2006
7.	27 Mar 2015	RUDOMAL KVLP and QUARZKIT MS90LS added to MSDS
8.	15 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.
9.	10.Jan.2018	Header updates and section 1.3.
10.	12.April 2018	Section. 3 - Change of classification - deletion of Aquatic Chronic 3: Hazardous to the aquatic environment (chronic), cat. 3 H412. Release P273 and P391. Odd. 13, 15. - Updating of legislation
11.	15.12.2022	Modification of SDS according to Commission Regulation EU 2020/878. Update of legal regulations. Added UFI code.

Important literature references and data sources: Data contained in this material safety data sheet were compiled from materials of the manufacturer, according to the supplier's documents on the components "micronized Štřeleč sand", "water glass 36/38, sodium silicate container 1000 lt", LITHOPIX S2", and on the basis of the legislation in force in the CR and the EU.

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:  
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.

Social dialogue on respirable crystalline quartzite:

The Multi-sectoral Social Agreement on Workers Health Protection Through the Good Handling and Use of Crystalline quartzite and Products Containing It, signed on 25 April 2006. This autonomous agreement, which received financial support from the European Commission, is based on a Good Practices Guide. The requirements of the Agreement came into force on 25 October 2006. The Agreement was published in the Official Journal of the European Union (2006/C 279/02). The text of the Agreement and its annexes, including the Good Practices Guide, are available at <http://www.nepsi.eu> and provide useful information and guidance for the handling of products containing respirable crystalline quartzite. References are available on request from EUROSIL, the European Association of Industrial Producers of silica products.

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

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.**