P-D Refractories CZ a.s.

Nádražní 218
679 63 Velké Opatovice

MATERIAL SAFETY DATA SHEET (Nr.25a)

according Regulation EC No. 1907/2006 (REACH), Regulation EC No. 1272/2008 (CLP) and Commission Regulation EU No. 2020/878

Product name: **Refractory mastic**
Product group: RUDOKIT
Quality class: **KT 1250W, KT1250W-L, KT1250W-N, NT 1350, S 25-05 NV, S 40-05 NV, SILATERM**

PD-Mt Si90cr, PD-Mt F25cr, PD-Mt F35cr

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.

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

Building industry – wet 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 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 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 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 Label 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/ INFORMATION ON INGREDIENTS

3.1. Substancess:

Not applicable.

3.2. Mixtures:

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:

Name of component	**Concentration % mass**	**CAS EC Index number Registration number**	**Classification according to 1272/2008/EC**
Quartz (SiO_2) (micronized Střeleč sand)	KT 1250W: < 11,2*) KT1250W-L: < 11,2*)	14808-60-7 238-878-4	STOT RE 1: Toxicity for specific target organs - repeated exposure, Cat. 1

	NT 1350: < 17,5*) S 25-05 NV: < 11,2*) S 40-05 NV: < 17,5*) SILATERM: < 42,4*)	Not given Not subject to registration	H372: Causes damage to lungs through prolonged or repeated exposure through inhalation.
Silicic acid, sodium salt (sodium water glass)	KT1250W, KT1250W-L, S25-05NV, NT1350, S40-05NV: ≤ 12,5**) SILATERM: ≤ 15,1**)	1344-09-8 215-687-4 Not given Not given	According to the supplier's classification the component is not hazardous

*) Expressed as respirable fraction content
**) expressed as active ingredient content of additive

Note: The components stated above only manifest the hazardous properties when in the dry phase in the form of dust. The hazardous properties are not manifested in the application form (wet compound).

Substances with workplace exposure limits:
Does not contain any in the form for application and after hardening; for separation (working) of the hardened product, see data in Section 8.1.

SECTION 4. FIRST AID MEASURES

4.1 Description of first aid measures:
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.

Ingestion: 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 Most important symptoms and effects, both acute and delayed:
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 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. 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:

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.

SECTION 7. HANDLING AND STORAGE

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, including any incompatibilities: Store in a dry place. Storage limits: None are specified.

7.3 Specific end uses:

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.
With regard to the character of the preparation, it is possible to use the following values **for conditions when dust is produced (i.e. division and working of the hardened compound):**

For dust with prevailingly 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})		PEL_c (mg.m^{-3})
	$F_r \leq$ 5%	$F_r >$ 5%	
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 prevailingly non-specific effect

Substance	PEL ($mg.m^{-3}$)
Aluminium and its oxides (except for gamma Al_2O_3)	10

8.2 Exposure controls:

8.2.1 Appropriate egineering controls: Ventilation – Where dust content in the air may be controlled with technical methods (local exhaustion, 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 – wet mix with a granularity below 0.5 mm,
b) Colour:	grey colour,
c) Odour:	Not specified
d) Melting point/freezing point:	11
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:	Not specified
h) Flash point:	Not specified
i) Auto-ignition temperature:	Not specified.
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	Not specified.
r) Relative vapour density	2.5 – 2.8 g/cm3 (bulk density)
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 reactions:	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_{50}, oral, rat ($mg.kg^{-1}$): not specified
- LD_{50}, dermal, rat or rabbit ($mg.kg^{-1}$): not specified
- LC_{50}, inhalation, rat, for aerosols or particles ($mg.kg^{-1}$): not specified
- LC_{50}, inhalation, rat, for gases and vapours ($mg.kg^{-1}$): not specified

b)Skin corrosion/irritation	Irritant
c) Serious eye damage/irritation	Can cause rapid eye damage.
d) Respiratory or skin sensitisation	The dry form can irritate.
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

This product contains respirable quartz as an impurity and therefore is classified as STOT RE 2 according to the 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) Aspiration hazard Not classified.

11.2Information on other hazards

11.2.1 Endocrine disrupting properties

They are not available.

11.2.2 Other information

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.

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: potential negative effects are associated with the mechanical effects of dust formation when the product dries

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 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:

European waste catalogue

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.

14.6 Special precautions for user:
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 ,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.	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.	18 Nov 2016	Section 2.1, 2.2: Change in the classification and labelling with regard to the form of application. Modification of the text in Section 1.2, 3.2, 8.1, 13.3, 15.1 and 16 – without any impact on the stated principles of manipulation.
7.	20.Jan.2018	Header update and section 1.3. number
8.	30.08.2021	Quality addition KT1250W-N
9.	23.12.2022	Modification of SDS according to Commission Regulation EU 2020/878. Update of legal regulations + insertion of PDGR equivalents

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.

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):

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.

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.

Other information:

This safety data sheet is issued by P-D Refractories CZ 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 material safety data sheet.