



PRODUCT CATALOGUE FOR

# MINERALOGY

**POLPUR™**

## **POLPUR, LTD.**

### **FOUNDED IN 1991, IS WHOLLY A CZECH COMPANY.**

We develop and produce polishing, lapping and grinding tools, especially for the glass, jewellery and optical industries. We also offer manufacturing of precision glass elements.

The POLPUR tools have been used successfully by domestic glassmakers for years. However about 75% of our production is exported to the whole world, thanks to our sales representatives or directly to final customer.

Comparing to traditional tools, the advantages of POLPUR tools are based on their higher durability and productivity, higher reproducibility and quality of processed surface. Higher work safety and lower physical effort, in the connection with a cleaner working conditions are advantages appreciated by operators.

POLPUR tools are used with great success on semi- and fully automatic machines in the leading world glassworks. In the same time, they are popular with glass artists.

Besides our common assortment, POLPUR offers customization and new product development to find optimal solution for customers.

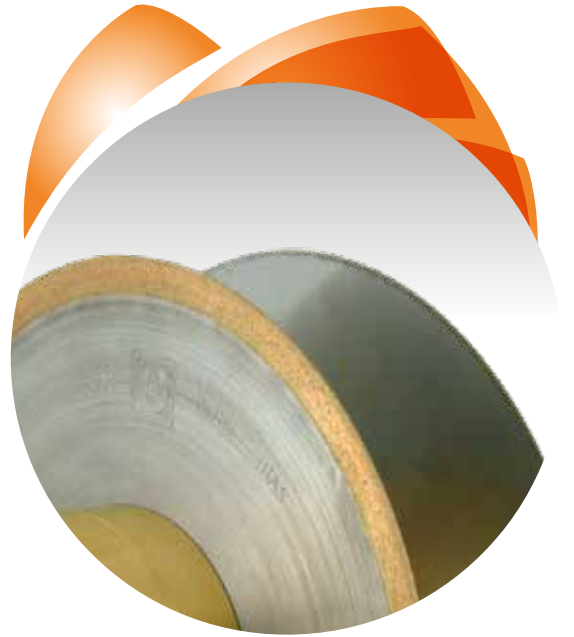
# CUTTING, GRINDING

## DIAMOND SAWS

There are 2 types of saws: sintered and charged.

- Sintered saws are suitable for series cutting because they have a thick layer of diamond.
- Charged saws are suitable for occasional cutting because the diamond grain is pressed into their surface in small quantities. Compared to sintered saws, they have very thin cut-through, but also less durability.
- The centre bore of sintered saws can be modified according to customer's requirements.

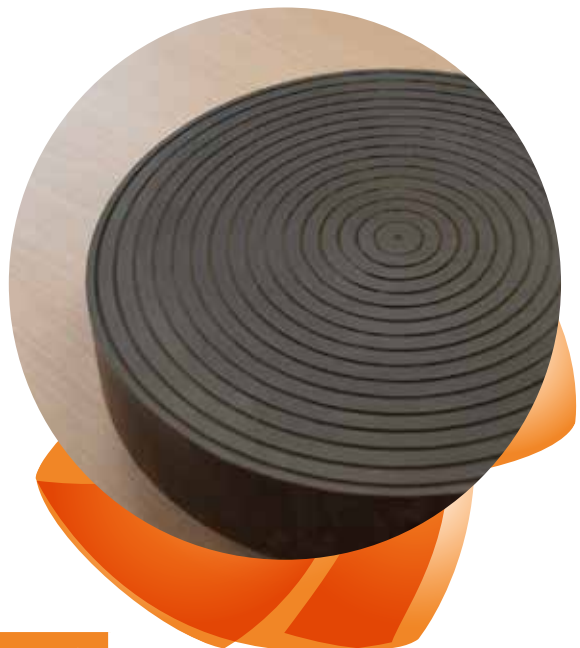
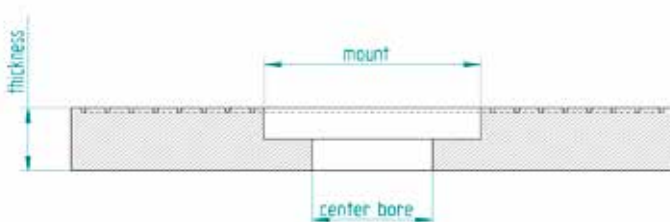
SINTERED SAWS		CHARGED SAWS	
SIZE	PRICE	SIZE	PRICE
Ø 125×0.8/20 mm	€ 50.40	Ø 120×0.3/30 mm	€ 4.80
Ø 150×0.8/20 mm	€ 48.70	Ø 120×0.4/30 mm	€ 5.00
Ø 150×1.4/30 mm	€ 65.90	Ø 120×0.5/30 mm	€ 7.00
Ø 150×2/16 mm	€ 83.60	Ø 120×0.6/30 mm	€ 7.90
Ø 200×1/20 mm	€ 75.20	Ø 150×0.5/30 mm	€ 8.40
Ø 200×1.4/20 mm	€ 68.10	Ø 200×0.4/35 mm	€ 9.00
Ø 200×2/20 mm	€ 85.80	Ø 200×0.5/35 mm	€ 10.10
Ø 250×1.8/20 mm	€ 131.70		
Ø 300×2.2/20 mm	€ 135.10		
Ø 400×2.2/20 mm	€ 171.80		



## CAST-IRON WHEELS

Cast-iron wheels for grinding slurry ( $\text{SiC}$ ,  $\text{Al}_2\text{O}_3$ ).

- Perfect for rough grinding as well as for final preparation of the surface before polishing.
- Working surface of the tool can be smooth, or with axial grooves for better distribution of grinding suspension.
- The center bore, with possible thread and mount, are made according to the customer's request.



DIAMETER	THICKNESS	PRICE
350 mm	20 mm	€ 170
400 mm	30 mm	€ 214

# POLISHING

## CARRIERS OF POLISHING & LAPPING SLURRIES

### MH TOOLS

Wheels are manufactured from specially treated porous polyurethane foam. The tools are used in all cases where, up until now, traditional materials such as cork, poplar wood, felt, etc., have been used. When compared with traditional materials, MH Tools offer the following advantages:

- Greater durability
- Higher reproducibility
- Higher polishing effectivity
- Greatly improved work safety
- Higher quality of polished articles
- Less physical effort



### TOOLS ARE MANUFACTURED IN 4 GRADES OF HARDNESS

- **MM** - very soft, **M** - soft, **T** - hard, **TT** - very hard
- For natural mineral polishing mainly MH wheels in T hardness are suitable. M hardness can be used in some special cases.

**RECOMMENDED WORKING CONDITIONS** • 7 m/s (Cutting lathes), 5 m/s (Flat grinding machines)

DIAMETER	100 mm	200 mm	300 mm	400 mm	500 mm	600 mm
THICKNESS	20 mm	30 mm	35 mm	35 mm	35 mm	60 mm
PRICE	€ 11.70	€ 37.80	€ 52.60	€ 73.00	€ 106.50	€ 190.50

### FELT TOOLS NP

- NP tools are manufactured from pure natural wool.
- High absorption capacity of the tool.
- NP tools carry polishing slurry excellently.

### TOOLS ARE MANUFACTURED IN 2 GRADES OF HARDNESS

- **M** - soft - 0,50 g/cm<sup>3</sup>
- **T** - hard - 0,60 g/cm<sup>3</sup>

**GRINDING AND POLISHING SLURRIES** • All traditionally used polishing slurries such as fine pumice, tripoli, oxides cerium can be used. Due to the fineness of the fiber, it is recommended to use finer types of grinding materials.

**RECOMMENDED WORKING CONDITIONS** • 8 m/s (Cutting lathes), 4 m/s (Flat grinding machines)



DIAMETER	THICKNESS	CENTRE BORE	HARDNESS M	HARDNESS T
300 mm	40 mm	42 mm	€ 44.30	€ 49.90
500 mm	40 mm	42 mm	€ 115.00	€ 138.10

## CZ & AB TOOLS

The CZ and AB tools consist of a non-woven fabric impregnated with various types of polyurethanes. Due to small thickness it keeps the flatness of the workpiece perfectly.

- High quality of the polished surface.
- Minimum surface geometry change.
- CZ tools can be used on planar, spherical and aspherical surfaces.
- AB tools are suitable just for planar surfaces, but they hold better the flatness of the workpiece.

**RECOMMENDED POLISHING AGENTS** • All common polishing slurries, namely oxides of metals or silica gel (Tosil 20). Submicron diamond powder can be also used.

**GLUEING** • Chlorinated rubber adhesive (eg Pattex Strong) is suitable for glueing CZ foils. Polyurethane adhesive (eg Bison PU Max) is required for bonding AB foils. Both types of foils can also be glued to the carrier with double-sided adhesive tape.

**HARDNESS** • 30-35 ShD (CZ), 40-45 ShD (AB)

**THICKNESS** • standardly 3.4 mm (CZ) and 3.6 mm (AB). On customer's request can be reduced down to 0.6 mm.

**DIAMETER** • Up to  $\varnothing$  900 mm.

DIAMETER	CZ	AB
300 mm	€ 11.36	€ 10.96
400 mm	€ 18.24	€ 17.56
500 mm	€ 28.48	€ 27.44



## POLISHING

### WHEELS WITH INCORPORATED ABRASIVES

#### ATP TOOLS

ATP is a tool with polyurethane bond, with high concentration of incorporated polishing slurry (cerium oxide).

- Tool is cooled only with water (no impurity!).
- Tool holds flatness of polished surface well.

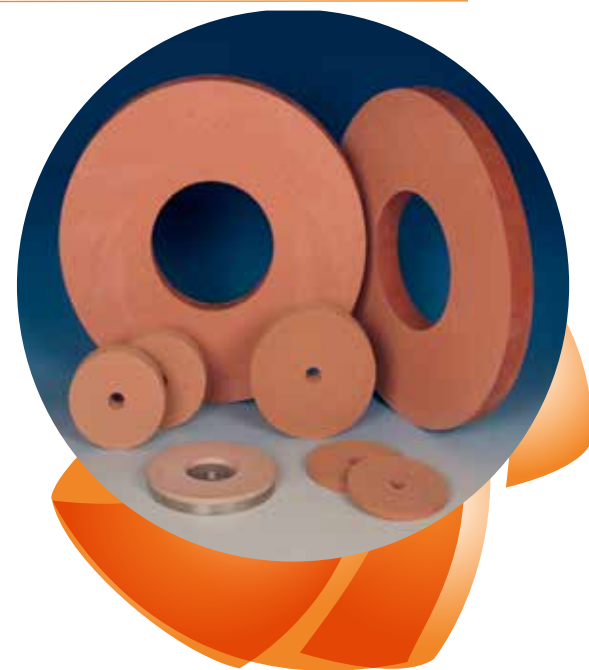
**SUITABLE STARTING SURFACE** • After fine diamond tool of M25 grit size or grinding slurry SiC F600.

**GLUEING OF THE TOOL** • Chlorinated rubber adhesive (eg Pattex Strong) is suitable. The tool can be supplied already glued on a hard-aluminium carrier.

**HARDNESS** • 65 ShD

**DIAMETER** • Upon customer's request.

DIAMETER	THICKNESS	CENTRE BORE	PRICE
150 mm	20 mm	42 mm	€ 51.20
200 mm	20 mm	20 mm	€ 86.40
295 mm	20 mm	20 mm	€ 178.20



# ABRASIVES

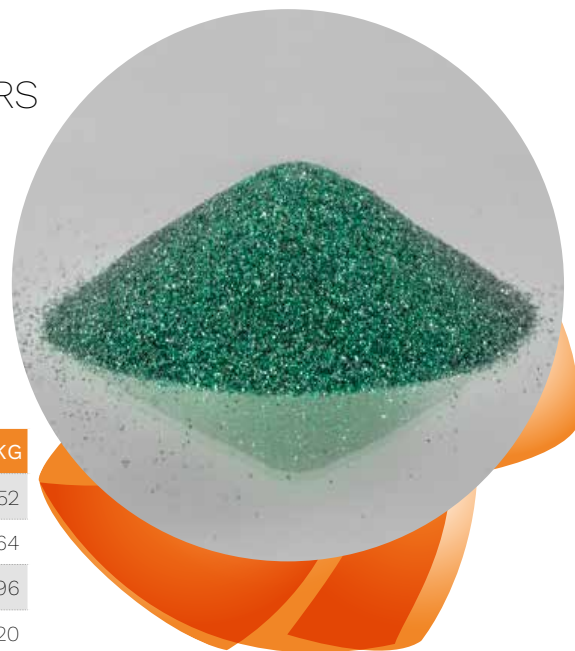
## GRINDING, LAPPING AND POLISHING POWDERS

### GRINDING, LAPPING

#### Carborundum (SiC), White corundum (Al<sub>2</sub>O<sub>3</sub>)

- Grinding and lapping powders suitable for grinding slurry.
- Two types of SiC: Black 48C, Green 49C (better quality).
- We offer various grit sizes in range of F16-F1200.

CORUNDUM	PRICE FOR KG	BLACK SIC	PRICE FOR KG
F16-F90	€ 1.68	F16-F90	€ 2.52
F100-F220	€ 1.76	F100-F180	€ 2.64
F240	€ 2.51	F220-F360	€ 2.96
F280-F320	€ 2.96	F400	€ 3.20
F360-F400	€ 3.54	F500-F1000	€ 3.59
F600	€ 3.82		
F800	€ 4.92		
F1000	€ 5.16		
F1200	€ 7.08		

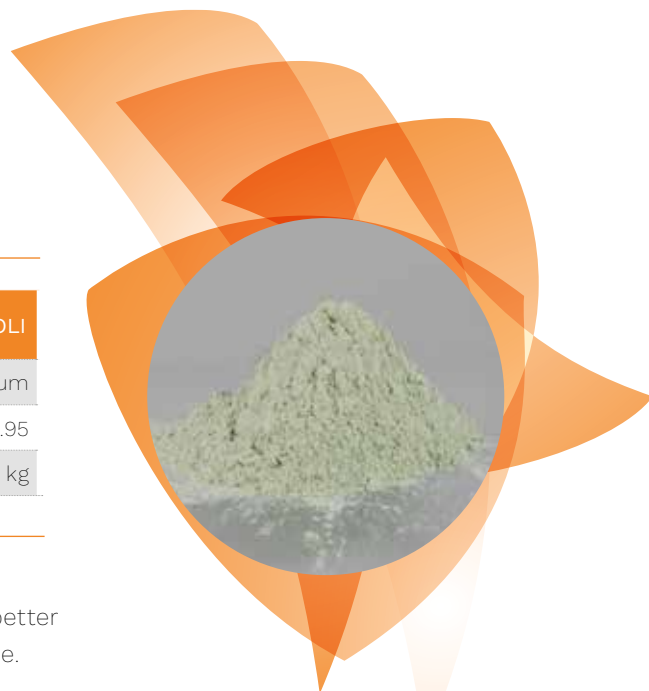


### POLISHING

#### Pumice, Tripoli

- Abrasives suitable for pre-polishing or final polishing.

	PUMICE G1	PUMICE 1/0 N	PUMICE 2/0 N	PUMICE 3/0 B	PUMICE 6 (FF)	TRIPOLI
D50	315 µm	42 µm	32 µm	45 µm	16 µm	3.5 µm
PRICE FOR KG	€ 2.40	€ 2.40	€ 2.48	€ 2.40	€ 2.40	€ 1.95
PACKAGE	25 kg	25 kg	25 kg	25 kg	25 kg	25 kg



#### Cerium oxide polishing powders (CeO<sub>2</sub>)

- Due to higher cerium oxide content, Cerox 1650 and 1670G have better polishing ability than Cerox 2610, which is their cheaper alternative.
- For highest brilliance, Opaline powder can then be used.
- Recommended carriers: Polpur tools (MH, NP, CZ, AB).

TYP	CEROX™ 1650	CEROX™ 1670G	CEROX™ 2610	OPALINE™
PRODUCER	Solvay	Solvay	Solvay	Solvay
D50	1.0 - 2.0 µm	1.0 - 2.0 µm	2.7 µm	1.17 µm
CeO <sub>2</sub> CONTENT	54 - 63 %	≥ 66,5 %	≥ 47 %	≥ 99 %
COLOUR	white	white	white	white
PRICE FOR KG	€ 30	€ 30	€ 19	€ 80
PACKAGE	20 kg	20 kg	20 kg	20 kg

 SOLVAY



## GRIT SIZES TABLE OF GRINDING AND POLISHING TOOLS

FEPA ISO 6106	US STANDARD ASTM E 11M	SIZE µm	DIN 848	ČSN 224015
<b>M 1</b>	0 – 1	0 – 1	0.7	1 / 0
<b>M 1.6</b>	1 – 2	1 – 2	1	2 / 1
<b>M 2.5</b>	1.5 – 3	1.5 – 3		3 / 2
<b>M 4</b>	2 – 4	2 – 4	3	4 / 2
<b>M 6.3</b>	3 – 6	3 – 6		5 / 3
<b>M 10</b>	4 – 8	4 – 8		7 / 5
	6 – 12	6 – 12	7	10 / 7
<b>M 16</b>	8 – 16	8 – 16		14 / 10
	10 – 20	10 – 20	15	20 / 14
	15 – 25	15 – 25		
<b>M 25</b>	15 – 30	15 – 30	25	28 / 20
	20 – 30	20 – 30		
<b>M 40</b>	20 – 40	20 – 40	30	40 / 28
	30 – 40	30 – 40		
	20 – 50	20 – 50		60 / 40
<b>M 63</b>	30 – 60	30 – 60		
<b>D 39</b>	400 / 500	28 – 40	35	36 / 25
<b>D 46</b>	325 / 400	38 – 45	45	40 / 36
<b>D 54</b>	270 / 325	45 – 53	50	50 / 40
<b>D 64</b>	230 / 270	53 – 63	55	63 / 50
<b>D 76</b>	200 / 230	63 – 75	65	80 / 63
<b>D 91</b>	170 / 200	75 – 90	90	
<b>D 107</b>	140 / 170	90 – 106	100	100 / 80
<b>D 126</b>	120 / 140	106 – 125	110	125 / 100
<b>D 151</b>	100 / 120	125 – 150	150	160 / 125
<b>D 181</b>	80 / 100	150 – 180	180	
<b>D 213</b>	70 / 80	180 – 212		200 / 160
<b>D 251</b>	60 / 70	212 – 250	220	250 / 200
<b>D 301</b>	50 / 60	250 – 300	280	315 / 250
<b>D 426</b>	40 / 45	355 – 425	350	400 / 315
<b>D 426</b>	35 / 40	426 – 500	450	500 / 400



POLPUR COMPANY FOCUSES ON FOLLOWING PRODUCTS:

### **GLASSWARE**

Polyurethane and diamond tools for working of all types of glass. Tools for manual and semi-automatic processing. Grinding and polishing powders. [en.polpur.cz/glassware](https://en.polpur.cz/glassware)

### **ART GLASS**

Polyurethane and diamond tools for artificial glass refinement. Suitable for manual polishers as well as for horizontal and vertical machines. Grinding and polishing powders. [en.polpur.cz/artglass](https://en.polpur.cz/artglass)

### **FLAT GLASS**

Polyurethane and diamond tools. Low-E glass decoating discs. Grinding and polishing powders. [en.polpur.cz/flatglass](https://en.polpur.cz/flatglass)

### **MINERALOGY**

Diamond saws, wheels and polishing pads for gemstones processing. Grinding and polishing powders. [en.polpur.cz/mineralogy](https://en.polpur.cz/mineralogy)

### **GLASS JEWELLERY**

Polyurethane tools for processing of glass jewellery (chatons, beads, chandelier pendants, etc.). Suitable for manual as well as semi-automatic processing. Grinding and polishing powders. [en.polpur.cz/jewellery](https://en.polpur.cz/jewellery)

### **GLASS ENGRAVING**

Polyurethane and diamond wheels on shank and with central bore. Grinding and polishing powders. [en.polpur.cz/engraving](https://en.polpur.cz/engraving)

### **OPTICAL GLASS**

Polyurethane and textile polishing pads for semioptical and optical applications. Lapping and polishing powders. [en.polpur.cz/opticglass](https://en.polpur.cz/opticglass)

### **GLASS PROCESSING**

CNC manufacturing of complex shapes up to 1300×600×600 mm. Processing of semi-optic and optic flat surfaces. [en.polpur.cz/glassprocessing](https://en.polpur.cz/glassprocessing)

### **METALS**

Polyurethane shank and peripheral tools with built-in abrasives for dry as well as wet processing. Lapping and polishing powders. [en.polpur.cz/metals](https://en.polpur.cz/metals)

**POLPUR**<sup>TM</sup>

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