

WHERE WE LIVE, QUALITY HAS A LONG TRADITION

Founded in 1996, OTEC has quickly established itself as the market's technology leader by developing new machine concepts, inventions and improvements. OTEC supplies machines which are carefully tailored to the needs of specific industries and which are truly impressive in terms of cost-effectiveness, handling and precision and which are far superior to conventional systems. Around 100 members of staff are employed at the company's headquarters in Southern Germany. A global sales network ensures excellent worldwide support, and world beating finishing are always guaranteed.



DF Series

For finishing individually clamped workpieces.



CF Series

For bulk processing precision engineered workpieces.



SF Series

Absolutely perfect for workpieces with complex geometries.



PERFECT SURFACES WORLDWIDE

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MEDIA FOR PERFECT SURFACES

The quality of any given surface depends on choosing the right combination of machine and process media.

The media must be carefully selected to match each individual type of workpiece. The composition and shape of the media and the selection of suitable process parameters are all key factors. Making the right decisions demands experience and expertise. In the case of tools, getting these factors right can determine the quality of edge rounding and increase tool life. Using the right media can give a surface accuracy of 0.1 µm. This is extremely important for medical devices. And we can do it.

In brief: Everything depends on using the right machine and the right media. Meeting such challenges is precisely what we do.

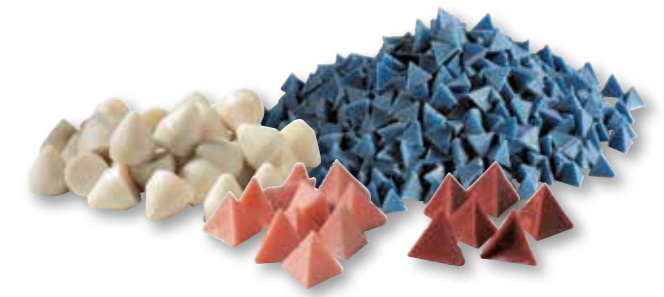


Plastic grinding chip

Plastic bonded grinding chips featuring

- low density
- soft base material

Area of application: mainly for grinding and polishing non-ferrous metals



Type	Color	Finish	Form	
			K  Cone size a mm	P  Pyramid size a=b mm
M	pale green	fine grinding and polishing, good rates of stock removal, gives very smooth surfaces	6; 10; 12	10; 12; 15
X*	white	from fine grinding to polishing, specially for the jewelry industry	10; 12	10; 12; 15
A	red	medium performance grinding, medium roughness	10; 12	6; 10
O	blue	high performance grinding, medium roughness	10; 12	10; 12
T	purple	very high performance grinding, roughsurface finish	10; 12	10; 12

Further sizes and qualities on request. Ordering example: Shape K, Quality X, Size 10 mm => KX10

* Suitable for grinding zirconia jewelry






Ceramic abrasives

Ceramic bonded abrasive featuring

- high density
- hard base material

Area of application: mainly for grinding steel alloys



Type	Finish	Shape				
		D  Triangle size a/b mm	S  Triangle (diagonal cut) size a/b mm	E  Ellipse size a/b mm	ZS  Cylinder** (diagonal cut) size a/b mm	DZ  Pyramid size a/b mm
P	polishing	-	-	-	1/3; 2/2; 2/5; 3/5; 3/10; 4/10; 5/10; 7/15	3/3 SK* 4/4 SK* 6/6 SK* 10/10 SK*
M	medium abrasive	6/6; 8/8; 13/13	-	-	6/13	6/6
S	highly abrasive	3/3; 6/6; 6/10; 10/8; 10/10; 13/13	4/10; 6/10	-	2/5; 3/5; 3/10; 4/10; 6/13; 8/15; 7/15	4/4; 6/6; 10/10
BS	very highly abrasive, coarse finish	6/6	-	-	-	-
SF	very highly abrasive, fine finish	4/4; 6/6; 10/6; 10/10	-	15/15/6	-	-

Further sizes and qualities on request

* very sharp edged

** also available in straight cut

Stainless steel media

No material is removed during finishing, only smoothing and hardening take place.
 Area of application: polishing, mirror-finish polishing and pressure deburring of non-ferrous metals



Type	Properties	Size
Spherical	polishing, densifying	2.4; 3.2; 4.0 mm
Satellites	polishing, densifying	SAT 3/5 mm
Pins	rounded pins very good polishing for use in magnetic polishers	0.3 x 5.0 mm 0.4 x 7.0 mm

Further sizes on request

Spherical zirconia

No material is removed during finishing, only smoothing and hardening take place.
 Material: zirconia
 Area of application: polishing, mirror-finish polishing and pressure deburring of non-ferrous and ferrous metals



Type	Properties	Size
		Spherical Ø
G-Zy	Very hard and therefore very long-lasting. Especially recommended for use in vibrators (in the jewelry industry)	0.8 – 1.0 mm
		1.2 – 1.4 mm
		2.0 – 2.5 mm

Further sizes on request

Microfinishing media

Fine-grain ceramic media in sintered ceramic featuring
 ○ very high density
 ○ wear resistant
 Area of application: polishing and fine grinding of workpieces in hardened steel



Type	Grinding effect	Surface	Size
			fine grain
KXMA 16	low	low roughness	1 – 1.4 mm
KXMA 20	low	low roughness	0.8 – 1.2 mm
KXMA 24	low	low roughness	0.6 – 0.8 mm

Further sizes on request

Wet grinding paste

Increases the abrasive effect of all types of grinding media.
 Also for roughening blunt grinding media.

Type	Grinding effect	Surface	Application / material
SP 62	high rate of stock removal	medium roughness	metals, SP process

Compounds

During the mass finishing process, compounds ensure clean, bright and corrosion-free workpieces.
 For workpieces which are sensitive to impact, the compound acts as a foam buffer between the workpiece and the abrasive media.

Type	Area of application	Description	Ph value	Dosage					Suitable for centrifuges	Suitable for microfiltration
					Deburring	Grinding	Polishing	Anti-corrosive		
SC 3	wet polishing	for soft alloys, brightening, suitable for stainless steel shot and zirconia beads	4.5	1-5%			X			
SC 4*	universal for wet grinding and wet polishing	high foaming for all non-ferrous metals, suitable for magnetic polishers	3	1-5%			X			
SC 5*	fine grinding, wet polishing	good foaming properties** brightening, for all precious and non-ferrous metals	6	3-5%	X	X	X			
SC 6	wet grinding	good foaming properties, suitable for microfiltration	7.5	1-5%	X	X	X		X	
SC 13	wet grinding, wet polishing	universal compound for all ferrous and non-ferrous metals, with anti-corrosive	8	1-5%	X	X	X	X		
SC 15	specially for closed loop centrifuges	universal compound (especially for ferrous metals), with anti-corrosive, low foaming	9.5	1-5%	X	X		X		
SC 21	wet grinding, (specially suitable for ultrafiltration units)	universal compound with very good foaming properties, brightening, for all metals	7.5	1-5%	X	X	X	X	X	
SC 23	wet grinding	suitable for microfiltration, good cleansing anti-corrosive properties	9	1-5%	X	X	X	X	X	
SC 25	wet grinding, wet polishing	for non-ferrous metals (especially aluminum), brightening	5	1-5%	X	X	X			
SC 26	wet grinding, wet polishing	for all non-ferrous metals and precious metals, low foaming, anti-corrosive	9	1-5%	X	X		X		
SC 37	wet grinding	universal compound for all ferrous and non-ferrous metals, very low foaming, anti-corrosive, suitable for closed-loop centrifuges, contains flocculant for faster sedimentation of the process sludge	9	1-5%	X	X	X	X	X	
UC 12	ultrasonic cleaning	precious metals, non-ferrous metals, stainless steel, aluminum, anti-tarnishing for non-ferrous metals	4.5	3-5%						

* available in various concentrations

** specially for the jewelry industry

Plastic polishing chips

These are used for the dry polishing of jewelry. The consistency of their geometry prevents dust from forming, a crucial factor in this area of application.

Area of application: jewelry industry, especially suitable for silver jewelry, highly recommended for hollow items, lobster clasps and curb chains.



Type / quality	Color	Grinding effect	Surface	Shape
				<p>Lens size a</p>
LFP 3	white	fine polishing	high shine	3.0 mm
DFP	white	fine polishing	high shine	0.4 - 0.8 mm

Dry granulate TZ

Defined-shape granules in polyethane with SiC added as abrasive.

Area of application: preferred for the edge rounding of cutting tools used with a cooling lubricant.



Type	Grinding effect	Surface	Remarks	Shape
				cylindrical size
TZM	medium	medium rough	The granulates do not break, keep their shape and are self-sharpening	2/3 mm; 4/5 mm
TZMS	intense	rough		2/3 mm; 4/5 mm
TZS	very intense	very rough		4/5 mm

HSC granulate

Gives very high quality surfaces, e.g. Rz 0.5 (previously Rz 2.5)

Areas of application:

- only for use in DF and SF machines
- for finishing HSS and carbide tools
- polishing coated tools and removing droplets
- smoothing and polishing carbide tools
- edge rounding of carbide tools up to a maximum of 15 – 20 µm
- removing solder residues

e.g. HSC 1/300, HSC 1/500

QZ W granulate

Abrasive granulate in aluminum oxide, used mainly for the edge rounding of carbide tools.



Type	Grain size	Typical use	Properties / surface
QZ 1-3 W	1.0 - 3.0 mm	for edge rounding over 30 µm	low roughness
QZ 1-2 W	1.0 - 2.0 mm	for edge rounding up to a max. of 30 µm	low roughness
QZ 0.5 W	0.5 mm	for edge rounding up to a max. of 15 µm	low roughness

Walnut shell granulate H 1 impregnated with polishing paste

This granulate is impregnated with a polishing paste so that no polishing paste needs to be added for the first 3 - 4 batches.



Type	Grain size	Typical use	Properties / surface
H 1/30	4.0 - 6.0 mm	mirror-finish polishing of non-ferrous metals, jewelry, titanium, steel alloys	very smooth surface
H 1/50	2.4 - 4.0 mm		
H 1/100	1.7 - 2.4 mm		
H 1/200	1.3 - 1.7 mm		
H 1/300	0.8 - 1.3 mm		
H 1/400	0.4 - 0.8 mm		
H 1/500	0.2 - 0.4 mm		

Walnut H 2 impregnated with grinding paste

This granulate is impregnated with a grinding paste so that no grinding paste needs to be added for the first 3 - 4 batches.



Type	Grain size	Typical use	Properties / surface
H 2/30	4.0 - 6.0 mm	fine grinding, deburring of stamped parts in non-ferrous metals, reducing orange peel effect	smooth surface
H 2/50	2.4 - 4.0 mm		
H 2/100	1.7 - 2.4 mm		
H 2/200	1.3 - 1.7 mm		
H 2/300	0.8 - 1.3 mm		

Walnut shell granulate H 3 impregnated with PP 01 polishing powder

This granulate is impregnated with a special polishing powder so that no polishing additive needs to be added for the first 3 - 4 batches.



Type	Grain size	Typical use	Properties / surface
H 3/100	1.7 - 2.4 mm	carbide, ceramics	smoothing, edge rounding up to 10 µm, polishing tools
H 3/400	0.4 - 0.8 mm		

Walnut shell granulate H 4 impregnated with PP 02 polishing powder

This granulate is impregnated with a special polishing powder so that no polishing additive needs to be added for the first 3 - 4 batches.



Type	Grain size	Typical use	Properties / surface
H 4/100	1.7 - 2.4 mm	carbide, ceramics	as H 3 but better shine, best polishing results for carbide metals, suitable for removal droplets
H 4/400	0.4 - 0.8 mm		
H 4/500	0.2 - 0.4 mm		

Walnut shell granulates can also be supplied unimpregnated (walnut shell granulate H 0). This granulate must be impregnated with a grinding or polishing paste before first use.

Dosage: 2 – 3 teaspoons per 5 kg of walnut shell granulate.

Corn granulate M 4 impregnated with PP 02 polishing powder

This granulate is impregnated with a special polishing powder so that no polishing additive needs to be added for the first 3 - 4 batches.

Type	Grain size	Typical use	Properties / surface
M 4/300	0.8 - 1.3 mm	medical devices, e.g. implants, motor racing, e.g. cylinder surfaces	very soft polishing granulate gives very smooth, mirror-finish surfaces
M 4/400	0.4 - 0.8 mm		
M 4/500	0.2 - 0.4 mm		

Corn granulate M 5 impregnated with PP 04 polishing powder

This granulate is impregnated with a special polishing powder so that no polishing additive needs to be added for the first 3 - 4 batches.

Type	Grain size	Typical use	Properties / surface
M 5/300	0.8 - 1.3 mm	medical devices, e.g. implants, motor racing, e.g. cylinder surfaces, watches, precision engineering	especially suitable for mirror- finish, scratch-free surfaces, absolutely the best surfaces possible
M 5/400	0.4 - 0.8 mm		

Dry grinding paste

These dry grinding pastes are mainly used in conjunction with H 2/... and M 2/... granulates in the dry finishing process. The rates of stock removal are considerably lower than with wet grinding media.

Type	Grinding effect	Surface	Application / material	Properties
SP 15	high rate of stock removal	very rough	steel	deburring of smaller burs, smoothing by wet grinding to avoid orange peel effect
SP 26	medium rate of stock removal	medium rough	non-ferrous metals	

Dry polishing paste

These polishing pastes are mainly used in conjunction with H 1/.. and M 1/.. granulates in the dry finishing process. They give high quality surfaces. Since they mostly contain oil, they also give good protection against corrosion.



Type	Surface	Application / material	Properties
P 1	very smooth, very good shine	precious metals, brass	
P 2	smooth, best shine	gold, brass	very liquid
P 3	smooth, good shine	precious metals	withstands high temperature
P 6	smooth, very high shine	precious metals	odourless
P 10	smooth, best shine	silver	
P 16	smooth, good shine	steel alloys	for the pharmaceutical industry
P 28	maximum smoothness, very good shine	steel alloys, titanium	good anti-corrosive properties

Polishing powder

These polishing powders are mainly used in conjunction with H 1/.. and M 1/.. granulates in the dry finishing process. They give high-quality, smooth surfaces with a very bright finish. Polishing powders are always used together with a grinding oil or grinding grease such as HL 11 or HL 7.

Type	Surface	Application / material	Properties
M 10	smooth, best shine	precious metals, brass	
M 18	very smooth, very good shine	steel, titanium	Polishing steel parts e.g. tool chucks
M 21	very smooth, very good shine	non-ferrous metals	
PP 01	smooth, good shine	ceramics, carbide metals	
PP 02	smooth, very high shine	ceramics, carbide metals, CoCr	Polishing implants
PP 04	maximum smoothness, very good shine	ceramics, carbide metals, CoCr	Polishing implants

Grinding oils

Adhesive oils are used in conjunction with H/.. and M/.. granulates and polishing powders. The adhesive oil creates a bond between the media substrate and the polishing powder. Adhesive oils are also suitable for recharging dried-out granulate and for binding dust particles, e.g. when using HSC granulates.

HL 10:
Biological grinding oil

HL 11:
Mineral grinding oil

