

Cutting



Cut-off wheels

Metallographic cutting is the first and very important step in sample preparation.

To take out a representative sample from a large workpiece or to make longitudinal or cross sections of smaller parts, it must be ensured that the sample is removed without the creation of heat that could modify or even damage the structure.

The surface of the sample after cutting must be free from thermal damage and with a minimum of mechanical deformation. Otherwise the following preparation steps will take very long time, and there is a risk that possible changes to the microstructure are not removed and may be seen as the "real" structure.

Our wheels are, in respect of the above, optimised especially for metallographic cutting to provide perfect results in the shortest possible time.

For precision cutting we offer a range of cut-off wheels in 150 mm dia. They are only 0.5 mm thick for fast cutting of different materials.

		Precision cut-off wheels		
		Aka-Cut 1000 HV	Aka-Cut 700 HV	Aka-Cut 400 HV / NF
H a r d n e s s	2000 HV			
	1500 HV			
	1000 HV			
	700 HV			
	500 HV			
	350 HV			
	250 HV			
	200 HV			
	150 HV			
	100 HV			
	50 HV			
Dia.	150 mm / 6" dia.	11151170	11151140	11151110

The abrasive cut-off wheels for laboratory and production type cut-off machines are available in 5 different standard sizes, from 250 to 432 mm dia., with an arbor size of 32 mm dia.

Our new range of cut-off wheels are named with both the material group they are designed for and the approximate hardness range. As can be seen in the table below, there are two Fe wheels for Ferrous Metals with a hardness of approximately 60 and 50 HRC.

The third wheel is especially developed for Titanium and Titanium Alloys, and the fourth wheel is designed for soft Non-Ferrous Metals.

Aka-Cut 500 HV is a fiber-reinforced wheel, very well suited for cutting of surface hardened workpieces. The fiberreinforcement strengthens the wheel and reduces breaking when subjected to pinching.

Use the table below to select the correct wheel for your specific material type, hardness and size.

		Abrasive Cut-off wheels				
		Aka-Cut Fe60	Aka-Cut Fe50	Aka-Cut Ti20	Aka-Cut NF10	Aka-Cut 500 HV
H a r d n e s s	1000 HV					
	700 HV					
	500 HV					
	350 HV					
	250 HV					
	200 HV					
	150 HV					
	100 HV					
	50 HV					
D i a m e t e r	250 mm / 10"	11252160	11252150	11252120	11252110	11251140
	300 mm / 12"	11302160	11302150	11302120	11302110	11301140
	350 mm / 14"	11352160	11352150	11352120	11352110	11351140
	400 mm / 16"	11402160	11402150	11402120	11402110	11411140
	432 mm / 17"	11432160	11432150	11432120	11432110	

150 mm dia. Precision cut-off wheels			
Product no.	Product name	Contents	GRWT kg
11151110	Aka-Cut 400HV NF Cut-off wheel 150 x 0.5 x 12.7 mm 50 - 400 HV Non Ferrous	5 pcs.	0,33
11151140	Aka-Cut 700 HV Cut-off wheel 150 x 0.5 x 12.7 mm 150 - 700 HV	5 pcs.	0,33
11151170	Aka-Cut 1000 HV Cut-off wheel 150 x 0.5 x 12.7 mm 500 - 1000 HV	5 pcs.	0,33

250 mm dia.			
Product no.	Product name	Contents	GRWT kg
11251140	Aka-Cut 500 HV Cut-off wheel 254 x 1.7 x 32 mm 150 - 500 HV	10 pcs.	2,02
11252110	NEW Aka-Cut NF10 Cut-off wheel 250 x 1.5 x 32 mm	10 pcs.	2,02
11252120	NEW Aka-Cut Ti20 Cut-off wheel 250 x 1.5 x 32 mm	10 pcs.	2,02
11252150	NEW Aka-Cut Fe50 Cut-off wheel 250 x 1.5 x 32 mm	10 pcs.	2,02
11252160	NEW Aka-Cut Fe60 Cut-off wheel 250 x 1.5 x 32 mm	10 pcs.	2,02

300 mm dia.			
Product no.	Product name	Contents	GRWT kg
11301140	Aka-Cut 500 HV Cut-off wheel 305 x 2.2 x 32 mm 150 - 500 HV	10 pcs.	3,24
11302110	NEW Aka-Cut NF10 Cut-off wheel 300 x 2.0 x 32 mm	10 pcs.	3,24
11302120	NEW Aka-Cut Ti20 Cut-off wheel 300 x 2.0 x 32 mm	10 pcs.	3,24
11302150	NEW Aka-Cut Fe50 Cut-off wheel 300 x 2.0 x 32 mm	10 pcs.	3,24
11302160	NEW Aka-Cut Fe60 Cut-off wheel 300 x 2.0 x 32 mm	10 pcs.	3,24

350 mm dia.			
Product no.	Product name	Contents	GRWT kg
11351140	Aka-Cut 500 HV Cut-off wheel 354 x 2.6 x 32 mm 150 - 500 HV	10 pcs.	5,91
11352110	NEW Aka-Cut NF10 Cut-off wheel 350 x 2.5 x 32 mm	10 pcs.	5,91
11352120	NEW Aka-Cut Ti20 Cut-off wheel 350 x 2.5 x 32 mm	10 pcs.	5,91

350 mm dia.

Product no.		Product name	Contents	GRWT kg
11352150	NEW	Aka-Cut Fe50 Cut-off wheel 350 x 2.5 x 32 mm	10 pcs.	5,91
11352160	NEW	Aka-Cut Fe60 Cut-off wheel 350 x 2.5 x 32 mm	10 pcs.	5,91

400 mm dia.

Product no.		Product name	Contents	GRWT kg
11402110	NEW	Aka-Cut NF10 Cut-off wheel 400 x 3.0 x 32 mm	10 pcs.	8,91
11402120	NEW	Aka-Cut Ti20 Cut-off wheel 400 x 3.0 x 32 mm	10 pcs.	8,91
11402150	NEW	Aka-Cut Fe50 Cut-off wheel 400 x 3.0 x 32 mm	10 pcs.	8,91
11402160	NEW	Aka-Cut Fe60 Cut-off wheel 400 x 3.0 x 32 mm	10 pcs.	8,91
11411140		Aka-Cut 500 HV Cut-off wheel 406 x 3.2 x 32 mm 150 - 500 HV	10 pcs.	8,91

432 mm dia.

Product no.		Product name	Contents	GRWT kg
11432110	NEW	Aka-Cut NF10 Cut-off wheel 432 x 3.0 x 32 mm	5 pcs.	12,00
11432120	NEW	Aka-Cut Ti20 Cut-off wheel 432 x 3.0 x 32 mm	5 pcs.	12,00
11432150	NEW	Aka-Cut Fe50 Cut-off wheel 432 x 3.0 x 32 mm	5 pcs.	12,00
11432160	NEW	Aka-Cut Fe60 Cut-off wheel 432 x 3.0 x 32 mm	5 pcs.	12,00

Additives for recirculation units



Together with Aka-Cool, the additive for the recirculation cooling unit, the Aka-Cut cut-off wheels will perform at their very best. Aka-Cool improves the cooling and lubricating ability of the water and acts as corrosion protection for both cut-off machine and sample material.

Aka-Cool is free from amine and boric acid, common in many other machine coolants. The absence of amines gives optimum skin compatibility with a pH of the mixed cooling fluid between 7 – 8, and an extremely low allergy potential.

The recommended mixing ratio of Aka-Cool in water is 3 – 5 %.

Aka-Cool guarantees a very long service life of the coolant and a safe and economical process flow.

Both in regards of cost and personal safety Aka-Cool is the optimal choice.

When (excessive) foaming of the cooling water occurs, Aka-NoFoam offers the solution. Any formation of foam drastically reduces cooling of the samples during cutting and can result in thermal damage.

Aka-NoFoam eliminates foam and thus increases the cooling ability of the cooling water.

The recommended mixing ratio of Aka-NoFoam in the cooling fluid is 0.5 – 1 %.



Aka-Cool		Additive for recirculation units	
Product no.	Product name	Contents	GRWT kg
19201015	Aka-Cool	1 l	1,00
19201017	Aka-Cool	5 l	4,90

Aka-NoFoam		Foam reducing additive	
Product no.	Product name	Contents	GRWT kg
19501013	Aka-NoFoam	500 ml	0,62