

# Aka-Cool - THE SMARTER ADDITIVE FOR PERFECT CUTTING



AKASEL

Aka-Cu

A80N - BF41 305 x 2,2 x 32mm ID . 11301140

500 H

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MADE IN EU

# Aka-Cut - THE SMARTER ALTERNATIVE FOR PERFECT CUTTING

the recirculation cooling unit, the Aka-Cut lubricating ability of the water and acts as

Aka-Cool is free from amine and boric coolants. It has optimum skin compatibility and an extremely low allergy potential. 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 ideal solution. The formation of foam drastically reduces cooling of the samples during cutting and can result in thermal damage of the material. Aka-NoFoam eliminates foam and thus increases the cooling ability of the cooling water.

Name	Contents	Product no.	
Aka-Cool	11	19201015	
Aka-Cool	5 l	19201017	
Aka-NoFoam	500 ml	19501013	

# **High Surface Quality** Long Lifetime **Maximum Reproducibility**

The Aka-Cut Cut-off wheels are developed and optimised to help you reach your sectioning tasks in the best possible way.

THE SMARTER **ALTERNATIVE** 

Aka-Cool

Water-soluble Coolant

cutting and grinding

ID: 19201015

AVABLE APS - SVOGERSLEV HOVEDGADE 48 - DK-4000 ROSKER4 - E TIL +45 ST04 0501 - FAX + 45 S784 0601 - VWWW.AKASEL.CDM

Fluid for Metallographic

R/S Sentancel None

Made: 041121

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AKA

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AKASEL.COM

MADE IN DENMARK

• Surface Quality = A plane surface without heat damage or deformation allows for the shortest possible grinding and polishing times

- Lifetime = Long lifetime eliminates frequent changing of wheels and reduces overall cost
- Reproducibility = Achieving the exact same results every time is crucial in Quality Control





# **Aka-Cut** - THE SMARTER ALTERNATIVE FOR PERFECT CUTTING

# OVERVIEW OF CUT-OFF WHEELS AND THE RECOMMENDED HARDNESS RANGES

#### Metallographic Cutting

step in metallographic sample prepsible to obtain maximum throughput

To achieve that, all preparation steps must be optimized regarding quality and time. This is especially important for the cutting process, where the use of inferior products may give short cutting times, but will result in heat damage and/or deformation. This again will result in much longer grinding times to remove the introduced damage, or, in wrong conclusions if not all damage has been removed.

Therefore the cutting process has to be carried out correctly and one of the most important parameters is the correct cut-off wheel. The Akasel cut-off wheels are manufactured according to the highest standards and especially designed to provide optimum results in metallographic cutting.

### Al<sub>2</sub>O<sub>3</sub> Cut-off wheels

For cutting of ferrous metals Al<sub>2</sub>O<sub>2</sub> as abrasive is the best choice.

Depending on the hardness of the materials to be cut, the hardness of the binder is adjusted. For hard materials, a softer binder is used to frequently release new, sharp abrasive grains.

For softer materials a harder bond is selected as the abrasive wears more slowly and does not need as frewheels last longer making cutting more economic.

#### SiC Cut-off wheels

Soft and ductile, non-ferrous metals are best sectioned using SiC as abrasive. SiC breaks down more easily compared to  $Al_2O_2$ , revealing new, sharp, cutting edges. This is important, especially for ductile materials where blunt abrasives easily introduce deep deformation that can be almost impossible to remove at a later preparation stage.

#### **Fibre-reinforced Cut-off wheels**

The Aka-Cut 500 HV is reinforced with a special fiberweb on both sides for maximum durability. Compared to non-reinforced wheels it can much better withstand the internal stress and tension in surface hardened workpieces and will reduce the risk of wheel breakage.

Hardness	Aka-Cut Fe60	Aka-Cut Fe50	Aka-Cut Ti20	Aka-Cut NF10	Aka-Cut 500 HV	
1000 HV	Х					
700 HV	Х	Х				
500 HV	Х	Х			X*	
350 HV		Х	Х		Х*	
250 HV			Х	Х	Х*	
200 HV			Х	Х	Х*	
150 HV			Х	Х		
100 HV			Х	Х		
50 HV				Х		
Wheel dia.	Product no.:					
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		

To easily find the correct wheel for a certain application both the material definition and the approximate hardness are used in the names of our new cut-off wheels.

#### Material definition:

Fe = Ferrous metals / Steels Ti = Titanium and Titanium Alloys NF = Non-Ferrous Metals / Aluminium, Copper, Brass

- 10 = (approx. 10 HRC) / 50 250 HV = very soft & soft metals
- a hardness of about 500 HV.

#### THE SMARTER **ALTERNATIVE**

The numbers are an indication of the hardness of the material to be cut: 60 = approx. 60 HRC / > 500 HV = hard & very hard steels

- 50 = approx. 50 HRC / 350 700 HV = medium hard to hard steels
- 20 = approx. 20 HRC / 100 350 HV = medium hard ductile metals

\* The Aka-Cut 500 HV is a fibre-reinforced wheel for cutting of all types of softer steel, and especially suited for surface hardened samples with

