

# Table of Contents

Ordering Information ..... 1  
 Quantity Discount Schedule ..... 2

## Sectioning

Abrasive Cut-off Wheels ..... 5  
 Wafering Blades ..... 10  
 Diamond Cut-off Blades ..... 12  
 Sectioning Accessories ..... 12

## Mounting

Compression Mounting Compounds ..... 14  
 Castable Mounting Compounds ..... 17  
 Mounting Accessories ..... 16 & 20

## Grinding/Polishing

Apex® Quick-Change Magnetic System ..... 25  
 Apex® Diamond Grinding Discs (DGD) ..... 26  
 ApexHercules® Rigid Grinding Disc ..... 28  
 UltraPrep™ Diamond Discs ..... 28  
 Abrasive Discs ..... 30  
 ZirMet® Abrasive Discs ..... 32  
 BuehlerMet® II Abrasive Discs ..... 33  
 Abrasive Belts, Rolls & Strips ..... 35  
 Abrasive Lapping Film ..... 36  
 Diamond Lapping Film ..... 37  
 Abrasive Powders ..... 40  
 Premium Polishing Cloths & Pads ..... 41  
 Final Polishing Powders & Suspensions ..... 45  
 Diamond Polishing Compounds, Extenders, & Misc. .... 47  
 Replicating Materials ..... 50

## Analysis/Documentation

Replacement Bulbs ..... 51  
 Hardness Calibration Test Blocks ..... 52

## Appendix

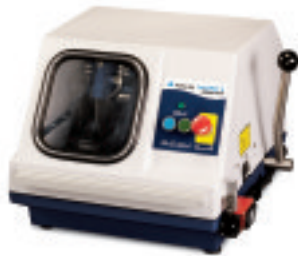
Sectioning ..... 54  
 Mounting ..... 55  
 Grinding/Polishing ..... 55

## Index

Approximate Consumables Shelf-Life ..... 60  
 Buehler International Serial Number Month Codes ..... 61  
 Notes ..... 62  
 Index ..... 63  
 Distributors/Sales Offices ..... Inside Back Cover



# Abrasive Cutters



## SamplMet® 2 Abrasive Cutter

- Smallest, affordable laboratory abrasive cutter with cam-lock vise
- Designed to meet low volume user needs
- Compact design
- Optional fastener vise
- Durable 1Hp (0.7kW) motor and 9" (229mm) blade enables 1.50" (40mm) diameter cut capacity

## Delta® AbrasiMet® Abrasive Cutter

- Delta AbrasiMet allows the operator to manually control the cutting process
- Powerful 4Hp (3.0kW) motor and 10" (254mm) blade enables 3.75" (95mm) diameter cut capacity
- Heavy-duty cast aluminum base with integrated T-slot beds
- Front-mounted push-button operator controls including dual function Stop and Emergency Stop
- Select hood safety switch with optional lock and motor brake



## Delta® Orbital, Automatic and Manual Chop Abrasive Cutters: The Science Behind The Cut

*Another Technological Advance From Buehler*

- Orbital Cutting Action provides Minimum Area of Contact Cutting (MACC) allowing for fast, minimum deformation cutting even with difficult to cut or large specimens
- Automatic and Manual Chop Cutters operate in a traditional chop action
- Models, options and versatile accessories allow machine to be tailored to your application
- Easy-to-use programmable system with large LCD display
- Largest orbital cutter offers a 15Hp (11kW) motor and uses 18" (455mm) wheels to provide 6.75" (170mm) diameter cut capacity
- 7.5Hp (5.5kW) and 10Hp (7.5kW) units also available with cut capacities from 3.75" (95mm) to 6" (152mm) diameter



**UNIQUE  
ORBITAL  
ACTION**

Work Piece



**TRADITIONAL  
CHOP  
ACTION**

Work Piece

# Sectioning

- Abrasive Cut-off Wheels
- Diamond Cut-off Blades
- Wafering Blades
- Sectioning Accessories



AcuThin™ Abrasive Cut-off Wheels



MetAbrase® Abrasive Cut-off Wheels

R - Rubber

**Abrasive cutting** is the most widely used method of material sectioning for microscopic examination. Selecting the correct wheel for a specific application, including abrasive type, abrasive size, bond strength and overall wheel thickness is essential to achieving a good cut. Adequate cooling, proper cutting technique and sample vising also play a large role in a burn-free cut with minimal deformation.

## Abrasive Cutting Troubleshooting Guide

Problem	Possible Cause	Suggested Remedy
Burning (bluish discoloration)	Overheated specimen	Increase coolant flow rate; reduce cutting pressure; select a wheel with softer bonding (faster breakdown)
Rapid wheel wear	Wheel bonding breaks down too rapidly	Select a wheel with harder bonding; reduce cutting pressure
Frequent wheel breakage	Uneven coolant distribution; loose specimen fixturing; abrupt contact with specimen	Adjust coolant flow to be even on both sides of the wheel; clamp the specimen more securely; start cut contact carefully
Resistance to cutting	Slow wheel bond breakdown	Select a wheel with softer bonding; use a "pulse" cutting mode; use cutter with oscillating motion or with minimal area of contact cutting* ability
Stalled wheels	Inadequate cutter capacity; pinched blade due to movement of specimen	Use cutter with greater horsepower; tighten the clamp on one side less than on the other side; reduce pressure or feed rate; use a with cutter oscillating motion or with Minimal Area of Contact Cutting* ability

\*Minimal Area of Contact Cutting as on the Delta Orbital Abrasive Cutter

**Buehler's AcuThin™ & MetAbrase® Cut-off Wheels** have been formulated for fast sectioning of both small, delicate specimens and large, sturdy specimens. The overall wheel thickness offers minimal kerf loss and a cooler cut. These blades give versatile cutting options over a wide variety of specimen types and perform best with manual operation.

½"

**AcuThin™ & MetAbrase® Abrasive Cut-off Wheels, ½" (12.7mm) Arbor Size for IsoMet® 2000, 4000 and 5000 Precision Saws, 10 per package**

Diameter	Bond/Abrasive	Thickness	Catalog Number	Price
5" (127mm)*	R/Al <sub>2</sub> O <sub>3</sub>	0.019" (.480mm)	10-4060-010	
5" (127mm)**	R/Al <sub>2</sub> O <sub>3</sub>	0.019" (.480mm)	10-4061-010	
7" (178mm) Steels and Stainless Steels	R/Al <sub>2</sub> O <sub>3</sub>	0.030" (.76mm)	11-4207-010	
7" (178mm) Hard or Soft Nonferrous Materials	R/SiC	0.030" (.76mm)	11-4217-010	

\* For cutting tool or hard steel, HRC45 and above \*\* For cutting medium hard, soft steel HRC45 and below

1¼"

**AcuThin™ Abrasive Cut-off Wheels, 1¼" (31.75mm) Arbor Size for SamplMet® 2, AbrasiMet®, AbrasiMet® 2, Delta® AbrasiMet®, AbrasiMatic®, AbrasiMatic® 2, PowerMet® 1000 and Delta® Cutters, 10 per package**

Diameter	Bond/Abrasive	Thickness	Catalog Number	Price
9" (229mm)*	R/Al <sub>2</sub> O <sub>3</sub>	0.025" (.635mm)	10-4160-010	
9" (229mm)**	R/Al <sub>2</sub> O <sub>3</sub>	0.025" (.635mm)	10-4161-010	
10" (254mm)*	R/Al <sub>2</sub> O <sub>3</sub>	0.030" (.762mm)	10-4260-010	
10" (254mm)**	R/Al <sub>2</sub> O <sub>3</sub>	0.030" (.762mm)	10-4261-010	
12" (305mm)*	R/Al <sub>2</sub> O <sub>3</sub>	0.032" (.813mm)	10-4360-010	
12" (305mm)**	R/Al <sub>2</sub> O <sub>3</sub>	0.032" (.813mm)	10-4361-010	

\* For cutting tool or hard steel, HRC45 and above \*\* For cutting medium hard, soft steel HRC45 and below



MetAbrase®  
Abrasive Cut-off Wheels

1 1/4"

1 1/4" (31.75mm) Arbor MetAbrase® Abrasive Cut-Off Wheels, 10 per package except where noted

Recommended Use	Diameter	Thickness	Bond/ Abrasive	Catalog Number	Price
Tool Steels HRC60 & Above, Carburized Steels	9" (229mm)	0.070" (1.8mm)	RR/Al <sub>2</sub> O <sub>3</sub>	10-4110-010	
	10" (254mm)	0.075" (1.9mm)	RR/Al <sub>2</sub> O <sub>3</sub>	10-4210-010	
	12" (305mm)	0.100" (2.5mm)	RR/Al <sub>2</sub> O <sub>3</sub>	10-4410-010	
	12"* (305mm)	0.100" (2.5mm)	RR/Al <sub>2</sub> O <sub>3</sub>	10-4510-010	
Hard Steels HRC50	14" (355mm)	0.075" (1.9mm)	R/Al <sub>2</sub> O <sub>3</sub>	10-4310-010	
	9" (229mm)	0.070" (1.8mm)	RR/Al <sub>2</sub> O <sub>3</sub>	10-4112-010	
	10" (254mm)	0.075" (1.9mm)	RR/Al <sub>2</sub> O <sub>3</sub>	10-4212-010	
Medium Hard Steels HRC35-50	12" (305mm)	0.100" (2.5mm)	RR/Al <sub>2</sub> O <sub>3</sub>	10-4412-010	
	14" (355mm)	0.115" (2.9mm)	RR/Al <sub>2</sub> O <sub>3</sub>	10-4312-010	
	9" (229mm)	0.070" (1.8mm)	RR/Al <sub>2</sub> O <sub>3</sub>	10-4116-010	
Soft or Annealed Steel HRC15-35, HRB46-90	10" (254mm)	0.075" (1.9mm)	RR/Al <sub>2</sub> O <sub>3</sub>	10-4216-010	
	12" (305mm)	0.100" (2.5mm)	RR/Al <sub>2</sub> O <sub>3</sub>	10-4416-010	
	12"* (305mm)	0.100" (2.5mm)	RR/Al <sub>2</sub> O <sub>3</sub>	10-4516-010	
Delicate Cutting (Ultra Thin Blade)	14" (355mm)	0.100" (2.5mm)	R/Al <sub>2</sub> O <sub>3</sub>	10-4316-010	
	9" (229mm)	0.063" (1.6mm)	R/Al <sub>2</sub> O <sub>3</sub>	10-4120-010	
	10" (254mm)	0.063" (1.6mm)	R/Al <sub>2</sub> O <sub>3</sub>	10-4220-010	
Hard Non-Metallics, Glass, Soft Rocks, Low Density Ceramics and Other Hard Materials (medium hard bond)	12" (305mm)	0.063" (1.6mm)	R/Al <sub>2</sub> O <sub>3</sub>	10-4420-010	
	12"* (305mm)	0.100" (2.5mm)	R/SiC	10-4520-010	
	14" (355mm)	0.100" (2.5mm)	R/Al <sub>2</sub> O <sub>3</sub>	10-4320-010	
Medium Hard Nonferrous Materials, Uranium, Titanium, Zirconium (soft bond)	9" (229mm)	0.032" (0.8mm)	R/Al <sub>2</sub> O <sub>3</sub>	10-4127-010	
	10" (254mm)	0.040" (1.0mm)	R/Al <sub>2</sub> O <sub>3</sub>	10-4227-010	
	12" (305mm)	0.045" (1.1mm)	R/Al <sub>2</sub> O <sub>3</sub>	10-4427-010	
	14" (355mm)	0.055" (1.4mm)	R/Al <sub>2</sub> O <sub>3</sub>	10-4327-010	
Soft Nonferrous Materials, Aluminum, Brass, etc. (hard bond)	9" (229mm)	0.063" (1.6mm)	R/SiC	10-4140-010	
	10" (254mm)	0.063" (1.6mm)	R/SiC	10-4240-010	
	12" (305mm)	0.063" (1.6mm)	R/SiC	10-4440-010	
	14" (355mm)	0.075" (1.9mm)	R/SiC	10-4340-010	
Soft Nonferrous Materials, Aluminum, Brass, etc. (hard bond)	9" (229mm)	0.063" (1.6mm)	R/SiC	10-4145-010	
	10" (254mm)	0.063" (1.6mm)	R/SiC	10-4245-010	
	10" (254mm)	0.043" (1.1mm)	R/SiC	10-4246-010	
	12" (305mm)	0.063" (1.6mm)	R/SiC	10-4445-010	
Soft Nonferrous Materials, Aluminum, Brass, etc. (hard bond)	14" (355mm)	0.075" (1.9mm)	R/SiC	10-4345-010	
	9" (229mm)	0.063" (1.6mm)	R/SiC	10-4150-010	
	10" (254mm)	0.063" (1.6mm)	R/SiC	10-4250-010	
	12" (305mm)	0.063" (1.6mm)	R/SiC	10-4450-010	
	14" (355mm)	0.085" (2.2mm)	R/SiC	10-4350-010	

\* 1 3/8" (35mm) Arbor

RR - Resin Rubber  
R - Rubber



**Delta® Orbital Cut-off  
Wheels**

**Delta® Orbital & Chop Abrasive Cut-off Wheels** are specially designed to maximize the technological advantages of the Delta Orbital & Chop Abrasive Cutters using a harder bond than the MetAbrasé® Wheels. This family of wheels will produce minimal deformation without sacrificing efficient cutting rates.

These wheels are specially formulated with you in mind, providing a better finish on the sample's cut surface; introducing less deformation into the part means less time and energy spent grinding! The Delta family of wheels saves cutting time also, enabling fast cuts without burning.

Forty-seven wheels to choose from ensure the best blade for the specific application.

Each blade uses Buehler's Easy ID Wheel Marking System, which allows for wheel identification while installed on the cutter.



**Delta® Superalloy Wheels**

RR - Resin Rubber  
R - Rubber

1 1/4"

**1 1/4" (31.75mm) Arbor Abrasive Wheels for Delta® Family of Abrasive Cutters, 10 per package**

Recommended Use	Diameter	Thickness	Orbital/ Chop	Catalog Number	Price
Tool Steels HRC60 & Above, Carburized Steels, RR/Al <sub>2</sub> O <sub>3</sub>	10" (250mm)	0.105" (2.7mm)	Orbital	12-4210-010	
	12" (300mm)	0.105" (2.7mm)	Orbital	12-4410-010	
	14" (350mm)	0.105" (2.7mm)	Orbital	12-4310-010	
	16" (400mm)	0.125" (3.0mm)	Orbital	12-5610-010	
	18" (455mm)	0.153" (3.8mm)	Orbital	12-5810-010	
	10" (250mm)	0.075" (1.9mm)	Chop	12-4010-010	
Hard Steels HRC50, RR/Al <sub>2</sub> O <sub>3</sub>	12" (300mm)	0.105" (2.7mm)	Chop	12-4110-010	
	10" (250mm)	0.105" (2.7mm)	Orbital	12-4212-010	
	12" (300mm)	0.105" (2.7mm)	Orbital	12-4412-010	
	14" (350mm)	0.105" (2.7mm)	Orbital	12-4312-010	
	16" (400mm)	0.125" (3.0mm)	Orbital	12-5612-010	
	18" (455mm)	0.153" (3.8mm)	Orbital	12-5812-010	
Medium Hard Steels HRC35-50, RR/Al <sub>2</sub> O <sub>3</sub>	10" (250mm)	0.075" (1.9mm)	Chop	12-4012-010	
	12" (300mm)	0.105" (2.7mm)	Chop	12-4112-010	
	10" (250mm)	0.105" (2.7mm)	Orbital	12-4216-010	
	12" (300mm)	0.105" (2.7mm)	Orbital	12-4416-010	
	14" (350mm)	0.105" (2.7mm)	Orbital	12-4316-010	
	16" (400mm)	0.125" (3.0mm)	Orbital	12-5616-010	
Soft or Annealed Steel HRC15-35, HRB46-90, RR/Al <sub>2</sub> O <sub>3</sub>	18" (455mm)	0.153" (3.8mm)	Orbital	12-5816-010	
	10" (250mm)	0.075" (2.7mm)	Chop	12-4016-010	
	12" (300mm)	0.105" (2.7mm)	Chop	12-4116-010	
	10" (250mm)	0.105" (2.7mm)	Orbital	12-4220-010	
	12" (300mm)	0.105" (2.7mm)	Orbital	12-4420-010	
	14" (350mm)	0.105" (2.7mm)	Orbital	12-4320-010	
Medium Hard Nonferrous Materials: Uranium, Titanium, Zirconium, R/SiC	16" (400mm)	0.125" (3.0mm)	Orbital	12-5620-010	
	18" (455mm)	0.153" (3.8mm)	Orbital	12-5820-010	
	10" (250mm)	0.075" (2.7mm)	Chop	12-4020-010	
	12" (300mm)	0.105" (2.7mm)	Chop	12-4120-010	
	10" (250mm)	0.105" (2.7mm)	Orbital	12-4245-010	
	12" (300mm)	0.105" (2.7mm)	Orbital	12-4445-010	
Soft Nonferrous Materials: Aluminum, Brass, Etc., R/SiC	14" (350mm)	0.105" (2.7mm)	Orbital	12-4345-010	
	16" (400mm)	0.125" (3.0mm)	Orbital	12-5645-010	
	18" (455mm)	0.153" (3.8mm)	Orbital	12-5845-010	
	10" (250mm)	0.075" (2.7mm)	Chop	12-4045-010	
	12" (300mm)	0.105" (2.7mm)	Chop	12-4145-010	
	10" (250mm)	0.105" (2.7mm)	Orbital	12-4250-010	
Superalloys R/Al <sub>2</sub> O <sub>3</sub>	12" (300mm)	0.105" (2.7mm)	Orbital	12-4450-010	
	14" (350mm)	0.105" (2.7mm)	Orbital	12-4350-010	
	16" (400mm)	0.125" (3.0mm)	Orbital	12-5650-010	
	18" (455mm)	0.153" (3.8mm)	Orbital	12-5850-010	
	10" (250mm)	0.075" (2.7mm)	Chop	12-4050-010	
	12" (300mm)	0.105" (2.7mm)	Chop	12-4150-010	
Superalloys R/Al <sub>2</sub> O <sub>3</sub>	10" (250mm)	0.055" (1.4mm)	Orbital	12-4205-010	
	12" (300mm)	0.055" (1.4mm)	Orbital	12-4405-010	
	14" (350mm)	0.063" (1.6mm)	Orbital	12-4305-010	
	16" (400mm)	0.075" (1.9mm)	Orbital	12-5605-010	
	18" (455mm)	0.100" (2.4mm)	Orbital	12-5805-010	

Use 14" and 16" (350mm and 400mm) MetAbrasé Wheels on the Delta Chop Action and Delta Manual Abrasive Cutters (page 6)



**MetAbrase®  
Abrasive Cut-off Wheels**

### 32mm

#### 32mm Arbor MetAbrase® Abrasive Cut-Off Wheels\*, 10 per package

Recommended Use	Diameter	Thickness	Catalog Number	Price
Tool Steels HRC60 & Above, Carburized Steels, RR/Al <sub>2</sub> O <sub>3</sub>	10" (254mm)	0.075" (1.9mm)	10-9210-010	
Hard Steels HRC50, RR/Al <sub>2</sub> O <sub>3</sub>	10" (254mm)	0.075" (1.9mm)	10-9212-010	
Medium Hard Steels HRC35-50, RR/Al <sub>2</sub> O <sub>3</sub>	10" (254mm)	0.075" (1.9mm)	10-9216-010	
Soft or Annealed Steel HRC15-35, HRB46-90, R/Al <sub>2</sub> O <sub>3</sub>	10" (254mm)	0.063" (1.6mm)	10-9220-010	
Delicate Cutting (Ultra Thin Blade) R/Al <sub>2</sub> O <sub>3</sub>	10" (254mm)	0.040" (1.0mm)	10-9227-010	
Hard Non-Metallics, Glass, Rocks, and Other Hard Materials R/SiC	10" (254mm)	0.063" (1.6mm)	10-9240-010	
Medium Hard Nonferrous Materials, Uranium, Titanium, Zirconium - R/SiC	10" (254mm)	0.063" (1.6mm)	10-9245-010	
Soft Nonferrous Materials, Aluminum, Brass, etc. R/SiC	10" (254mm)	0.063" (1.6mm)	10-9250-010	

\* For use on cutters with a 32mm arbor shaft

RR - Resin Rubber  
R - Rubber

# Precision Saws

## IsoMet® Low Speed (LS) Saw

- The “original” precision saw designed for low volume applications
- Affordable and compact
- Low speeds and loads produce minimum deformation
- 0.001” or 10µm specimen positioning accuracy via manual micrometer
- Automatic shut-off allows saw to run unattended
- 1/50 Hp (15W) motor, up to 5” (127mm) blades, and 1.25” (32mm) diameter cutting capacity



## IsoMet® 1000 Precision Saw

- Precision saw with LED display and touch panel controls
- 0.001” or 10µm specimen positioning via fascia panel increases ease-of-use
- Increased speed (100 - 975 rpm), load and 7” (178mm) blade size enable a wider variety of specimens to be cut quickly with low deformation
- Can be upgraded with versatile accessories:
  - Rotating/oscillating chuck for quicker cuts on larger specimens
  - Table saw for cutting out sections from PCB’s and other specimens
  - Goniometer for sectioning crystals along specific planes

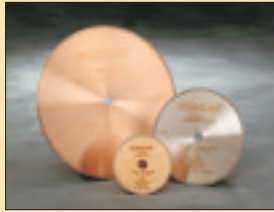
## IsoMet® 4000 Linear Precision Saw

- Easy-to-use fully automatic linear precision saw with 1µm specimen positioning and LCD display
- Linear action and large workspace combine precision cutting with longer specimen sectioning
- SMARTCUT system automatically adjusts feed rate to help prevent specimen, machine, and blade damage; thereby giving consistently good cuts with multiple materials and operators
- Most comprehensive selection of specimen fixturing, flanges, and blades maximize versatility
- Productive 1.25Hp (950 Watt) motor, up to 5000 rpm, and accepts up to 8” (203mm) blades



## IsoMet® 5000 Linear Precision Saw

- Expands upon the capabilities of the IsoMet® 4000 Linear Precision Saw by increasing the level of automation
- Automatic specimen positioning to 2µm via fascia panel and automatic linear feed advance and retract
- 55 method programmability increases productivity and specimen consistency
- Automatic serial sectioning for selected number of cuts to desired thickness
- Cup grinding system provides automatic grinding to target depth and for thin section preparation
- Compatible with IsoMet® 4000 accessories and vises



IsoMet® Diamond  
Wafering Blades



Dressing Sticks -  
11-2495, 11-1290, 10-4000,  
11-1190, 11-2490.

## Buehler® IsoMet® Diamond Wafering Blades

This proprietary high-tech family of blades was developed specifically to provide precise and accurate sectioning of samples. These blades utilize specially formulated diamond particles to give accurate cuts without the mess or inconvenience of thicker conventional abrasive cut-off wheels.

These blades have diamond particles bonded in a metal matrix along the outside diameter of the blade. The proprietary formulation of bonded diamond particles is designed to allow the bonding to breakdown efficiently to ensure the most effective cutting.

The thin blade (<1mm) makes IsoMet blades ideal for sectioning small specimens.

There is a wide selection of IsoMet blades to meet your specific needs. You can choose from over 25 different blades including six different diameters, and high or low diamond concentration. This wide selection ensures you the right blade for fast, efficient sectioning of the most difficult materials.

For fast cutting of ferrous materials see our IsoCut® Wafering Blades.

½"

½" (12.7mm) Arbor Wafering Blades for IsoMet® Low Speed, IsoMet® 1000, 2000, 4000 and 5000 Saws, with one dressing stick, packaged one per box

Recommended Use	Diameter	Thickness	Use with Saws*	Catalog Number	Price
<b>Series 30 High Concentration Diamond</b> for use with polymers, rubber, and other soft, gummy materials*	5" (127mm)	.030" (0.76mm)	1k, 2k, 4k, 5k	11-4239	
	7" (178mm)	.030" (0.76mm)	1k, 2k, 4k, 5k	11-4241	
	8" (203mm)	.035" (0.9mm)	4k, 5k	11-4242	
<b>Series 20 High Concentration Diamond</b> , for aggressive general sectioning of ferrous materials and nonferrous materials	5" (127mm)	.020" (0.5mm)	All	11-4215	
	7" (178mm)	.025" (0.6 mm)	1k, 2k, 4k, 5k	11-4237	
	8" (203mm)	.035" (0.9mm)	4k, 5k	11-4238	
<b>Series 15 High Concentration Diamond</b> , for routine use, metal matrix composites, PC boards, bone, titanium, thermal spray coatings	3" (76mm)	.006" (0.15mm)	All**	11-4243	
	4" (102mm)	.012" (0.3mm)	All	11-4244	
	5" (127mm)	.015" (0.4mm)	All	11-4245	
	6" (152mm)	.020" (0.5mm)	1k, 2k, 4k, 5k	11-4246	
	7" (178mm)	.025" (0.6mm)	1k, 2k, 4k, 5k	11-4247	
<b>Series 20 Low Concentration Diamond</b> , for use with hard tough materials, structural ceramics, boron nitride, silicon nitride	8" (203mm)	.035" (0.9mm)	4k, 5k	11-4248	
	5" (127mm)	.020" (0.5mm)	All	11-4225	
	7" (178mm)	.025" (0.6mm)	1k, 2k, 4k, 5k	11-4227	
	8" (203mm)	.035" (0.9mm)	4k, 5k	11-4228	
	3" (76mm)	.006" (0.15mm)	All**	11-4253	
<b>Series 15 Low Concentration Diamond</b> , for use with hard brittle materials, structural ceramics, glass, electronic substrates, alumina, zirconia, concrete	4" (102mm)	.012" (0.3mm)	All	11-4254	
	5" (127mm)	.015" (0.4mm)	All	11-4255	
	6" (152mm)	.020" (0.5mm)	1k, 2k, 4k, 5k	11-4276	
	7" (178mm)	.025" (0.6mm)	1k, 2k, 4k, 5k	11-4277	
	8" (203mm)	.035" (0.9mm)	4k, 5k	11-4279	
<b>Series 10 Low Concentration Diamond</b> , for use with medium to soft ceramics, electronic packages, GaAs, AlN, and glass fiber reinforced composites	3" (76mm)	.006" (0.15mm)	All**	11-4283	
	5" (127mm)	.015" (0.4mm)	All	11-4285	
	7" (178mm)	.020" (0.5mm)	1k, 2k, 4k, 5k	11-4287	
	8" (203mm)	.035" (0.9mm)	4k, 5k	11-4288	
<b>Series 5 Low Concentration Diamond</b> , for use with soft friable ceramics, composites with fine reinforcing media, CaF <sub>2</sub> , MgF <sub>2</sub> , and carbon composites	3" (76mm)	.006" (0.15mm)	All**	11-4298	
	5" (127mm)	.015" (0.4mm)	All	11-4295	

\* LS = IsoMet Low Speed 1k = IsoMet 1000 2k = IsoMet 2000 4k = IsoMet 4000 5k = IsoMet 5000

For appropriate selection of dressing sticks for use with the IsoMet Diamond Wafering Blades, see page 12.

\*\* 3" blade provides best cut on the IsoMet LS Saw.

‡ Series 30 Blades do not come with dressing stick as they do not require dressing

# Sectioning



**IsoCut® Wafering Blades**

## IsoCut® Wafering Blades

The IsoCut family of wafering blades was specifically developed to section iron-, cobalt-, lead-, and nickel-based alloys and superalloys.

These thin blades provide precise sectioning capability on difficult to cut samples. The special formulation of bonded cubic boron nitride on IsoCut blades can significantly reduce your sectioning time on ferrous materials compared to conventional diamond blades. The High Concentration blades will provide even faster sectioning times.

**1/2"**

**1/2" (12.7mm) Arbor IsoCut® Wafering Blades, for IsoMet® Low Speed, IsoMet® 1000, 2000, 4000 and 5000 Precision Saws, with one dressing stick, packaged one per box**

Recommended Use	Diameter	Thickness	Use with Saws*	Catalog Number	Price
<b>CBN - Low Concentration</b> for use with Iron and Cobalt Base Alloys, Nickel Base Super Alloys, and Lead Based Alloys	3" (76mm)	0.006" (0.15mm)	All	11-4263	
	4" (102mm)	0.012" (0.3 mm)	All	11-4264	
	5" (127mm)	0.015" (0.4mm)	All	11-4265	
	6" (152mm)	0.020" (0.5mm)	1k, 2k, 4k, 5k	11-4266	
	7" (178mm)	0.025" (0.6mm)	1k, 2k, 4k, 5k	11-4267	
	8" (203mm)	0.035" (0.9mm)	4k, 5k	11-4268	

\* 1k = IsoMet 1000 2k = IsoMet 2000 4k = IsoMet 4000 5k = IsoMet 5000

**1/2"**

**1/2" (12.7mm) Arbor IsoCut® Wafering Blades, for IsoMet® Low Speed, IsoMet® 1000, 2000, 4000 and 5000 Precision Saws, with one dressing stick, packaged one per box**

Recommended Use	Diameter	Thickness	Use with Saws*	Catalog Number	Price
<b>NEW</b> <b>CBN - High Concentration</b> for use with Iron and Cobalt Base Alloys, Nickel Base Super Alloys, and Lead Based Alloys	3" (76mm)	0.006" (0.15mm)	All	11-5263	
	4" (102mm)	0.012" (0.3 mm)	All	11-5264	
	5" (127mm)	0.015" (0.4mm)	All	11-5265	
	6" (152mm)	0.020" (0.5mm)	1k, 2k, 4k, 5k	11-5266	
	7" (178mm)	0.025" (0.6mm)	1k, 2k, 4k, 5k	11-5267	
	8" (203mm)	0.035" (0.9mm)	4k, 5k	11-5268	

\* 1k = IsoMet 1000 2k = IsoMet 2000 4k = IsoMet 4000 5k = IsoMet 5000

**Buehler Cup Grinders** are designed to be used on the IsoMet® 5000 Linear Precision Saw. The cup grinders are used for automatic grinding to a target depth and for thin section preparation.

**1/2"**

**1/2" (12.7mm) Arbor Cup Grinders, for IsoMet® 5000 Precision Saw, packaged one per box**



**Buehler Cup Grinders**

Description	Diameter	Abrasive/Bond	Catalog Number	Price
Cup grinder for ferrous metals	6" (150mm)	60 grit (P60) Al <sub>2</sub> O <sub>3</sub> /Vitrified	11-2720	
Cup grinder for nonferrous metals	6" (150mm)	60 grit (P60) SiC/Vitrified	11-2730	
Cup grinders for ceramic and geological specimens	5" (127mm)	240 grit (P280) Diamond/Resin	11-2740	

## Diamond Cut-off Blades

Additional Buehler Diamond Cut-off Blades with 5/8" (15.88mm), 3/4" (19.05mm), 1" (25.4mm) and 1 1/4" (31.75mm) Arbors are available for Buehler Cutters, the 80 BQ, 120 BQ, DI-MET®, 11R, 11B, 41A, and HIPA Cutters. Call for details.

### PetroThin® & PetroCut™ Sectioning Supplies, packaged one per box

Description	Size	Catalog Number	Price
Continuous Rim Diamond Blade	8" x 0.045" x 1" (203mm x 1.1mm x 25.4mm)	11-4278	
Continuous Rim Cubic Boron Nitride Blade*	8" x 0.045" x 1" (203mm x 1.1mm x 25.4mm)	11-4280	
Continuous Rim Diamond Blade	10" x 0.060" x 1 1/4" (254mm x 1.5mm x 32mm)	11-4710	
Diamond Cup Grinding Wheel	8" x 1/4" x 1" (203mm x 6.35mm x 25.4mm)	40-4508	
Cubic Boron Nitride Cup Grinding Wheel**	8" x 0.055" x 1" (203mm x 1.4mm x 25.4mm)	40-4512	
Dressing Stick	1/2" x 1/2" x 4" (12.7mm x 12.7mm x 102mm)	40-4510	

\* Recommended for cutting ferrous metals    \*\*Recommended for grinding ferrous metals

### 3/4" & 1"

### Notched Rim Diamond Cut-off Blades for Lapro® Saws, packaged one per box

Diameter	Type	Thickness	Catalog Number	Price
18" (457mm)	RIMLOCK**	0.064" (1.6mm)	11-1518-064	
24" (609mm)	RIMLOCK**	0.075" (1.9mm)	11-1524-075	

\*RIMLOCK is a registered trademark of Felker Operations



**Dressing Sticks -**  
11-2495, 11-1290, 10-4000,  
11-1190, 11-2490

To maximize the cutting efficiency of the Buehler Diamond Wafering Blades, proper dressing of the blade is required. Buehler's Dressing Sticks are formulated to have the proper texture and composition to quickly restore wafering blade cutting efficiency. When dressing Buehler Wafering Blades, use the dressing stick with the same series classification as on the blade.

### Dressing Sticks, One per package

Description	Application	Size	Catalog Number	Price
For IsoMet® 1000 & 2000 Saws	Series 20 & 15 Blades	1" x 1/2" x 3" (25.4mm x 13mm x 76mm)	11-2490	
For IsoMet® 1000 & 2000 Saws	Series 10 & 5 Blades	1" x 1/2" x 3" (25.4mm x 13mm x 76mm)	11-2495	
For IsoMet® LS, & IsoMet® 1000, 4000 & 5000 Saws	Series 20, 15 & IsoCut® Blades	1/2" x 1/2" x 3" (13mm x 13mm x 76mm)	11-1190	
For IsoMet® LS, & IsoMet® 1000, 4000 & 5000 Saws	Series 10 & 5 Blades	1/2" x 1/2" x 3" (13mm x 13mm x 76mm)	11-1290	
For Abrasive Cutters	For Abrasive Cut-off Wheels	1" x 1" x 6" (25.4mm x 25.4mm x 152mm)	10-4000	

**IsoCut® Fluid** is an oil-based coolant which can reduce cutting times significantly on many types of materials. It is only for use with IsoMet LS Saws or saws with the maximum speed of 500rpm.

**IsoCut® PLUS Fluid** is water-based and suitable for use on high speed, higher load and feed rate saws like the IsoMet® 1000, 2000, 4000 and 5000 as well as the IsoMet® LS Saws. This fluid can be used to lubricate and cool both conventional and advanced engineering materials.

**Buehler CoolMet® 2 Cutting Fluid** is an odorless, water miscible fluid concentrate with excellent lubrication and corrosion inhibiting qualities designed for a wide range of abrasive cutting.



**CoolMet® 2 Fluid,  
1 gal. (3.8ℓ)**

### Cutting Fluids and Chuck Padding

Fluid	Application	Quantity	Catalog Number	Price
IsoCut® Fluid*	IsoMet® LS Saws	1 qt. (0.95ℓ)	11-1193-032	
IsoCut® Fluid*	IsoMet® LS Saws	1 gal. (3.8ℓ)	11-1193-128	
IsoCut® PLUS Fluid	IsoMet® LS, 1000, 2000, 4000, 5000 Saws	1 pt. (0.476ℓ)	11-2293-016	
CoolMet® 2 Fluid	Abrasive Cutters	33.8 oz (1ℓ)	10-4330-095	
CoolMet® 2 Fluid	Abrasive Cutters	1 gal. (3.8ℓ)	10-4330-128	
CoolMet® 2 Fluid	Abrasive Cutters	5 gal. (19ℓ)	10-4330-640	
CoolMet® 2 Fluid	Abrasive Cutters	55 gal. (208ℓ)	10-4330-555	
Chuck Padding	For IsoMet® Chucks	3 -1" x 6" (25.4mm x 152mm)	11-2496	

\* Not for use with IsoMet 1000, 2000, 4000, or 5000 Saws

**Cutting Fluid Mixing Ratios** - All coolants should be mixed with distilled water to optimize performance. IsoCut® Fluid is used in an undiluted form.

Fluid	Water	Coolant
CoolMet® 2 Fluid	30	1
IsoCut® PLUS Fluid	9	1