

# TURN THE HEAT OF HIGH-SPEED MACHINING TO YOUR ADVANTAGE

High-speed machining means you can produce more in less time. With speed comes heat. Extreme heat at the cutting edge can be challenging to deal with. Machining steel, for example, can generate temperatures of 1200°C or more. High-speed machining demands a fluid that balances lubrication and cooling in extreme temperatures. Without the right balance, you risk harming surface finish, tool life and the product you're machining. Getting the balance right calls for an innovative approach.

## HOW DOES CASTROL® SYNTILO® TACKLE THESE ISSUES?

Castrol® Syntilo® is a portfolio of advanced synthetic cutting fluids that can innovatively adjust their cooling and lubricating performance to meet the demands of high-machining speeds — without compromising quality.

When temperatures rise, the lubricating components of Syntilo are activated to provide exactly the right levels of lubrication to the cutting edge. This empowers the formula to deliver high-speed machining performance — with noticeably low levels of foaming.

Castrol's liquid engineers have applied their deep understanding of developing synthetic cutting fluids and the demands of high-speed machining to create Syntilo products that meet different machining requirements.

### THE SYNTILO RANGE INCLUDES PRODUCTS SPECIFICALLY DEVELOPED TO:

- Extend fluid life in central systems and individual sumps.
- Deliver superior machining performance on difficult metals like Inconel and titanium alloys.
- Help meet environmental considerations and maintain a clean working environment.
- Offer extremely low foaming properties under high-pressure conditions.

IT'S MORE THAN JUST OIL. IT'S LIQUID ENGINEERING.



# GETTING AHEAD ON SAFETY

If you're currently using biocide additive top-ups in your cutting fluids — or using formulas that use boron or formaldehyde-releasing agents — then you could soon be affected by changes to legislation and best practice, such as the European Union's 10th Adaptation to Technical Progress (ATP) to the CLP (classification, labeling and packaging of substances and mixtures) regulation.

Castrol® Syntilo® 9930 BF, 9974 BF cutting fluids do not rely on boron, formaldehyde-releasing agents or biocides, so not only does using them protect your team, it also makes it easier to satisfy safety regulations — both today and tomorrow. Syntilo MR 9974 BF has these same benefits while also being mycobacteria and fungi resistant. Ultimately you have less maintenance, less expense and a safer working environment, without ever compromising on performance.

## ENGINEERED FOR HIGH-SPEED MACHINING, CASTROL® SYNTILO® HELPS YOU:

- Increase cutting speeds and feed rates to reduce cycle times.
- Settle chips quickly to prevent build-up.
- Improve productivity at high coolant pressures.
- Cool and lubricate machine tools at high speeds and in high-temperature operations

# PRODUCT DATA

Y = Suitable – varies by application (refer to PDS)  
N = Not Suitable  
C = Consult Castrol representative prior to use

BF = boron-free fluid; note: Syntilo 9913 is also boron-free  
MR = mycobacteria resistant

	PRODUCT NAME	PERFORMANCE	TYPE	TYPICAL pH RANGE 5% DILUTION	APPEARANCE	REFRACTOMETER FACTOR	MATERIAL SUITABILITY						
							CAST IRON	LOW-MEDIUM ALLOYED STEEL	HIGH ALLOY and STAINLESS STEEL	ALUMINUM	TITANIUM ALLOY	YELLOW METALS	TUNGSTEN CARBIDE
FERROUS	Syntilo 9902	Light Duty	Oil-Rejecting	8.5-9.0	Transparent	2.3	Y	Y	Y	N	C	N	N
	Syntilo 9730	Light to Medium Duty	Oil-Rejecting	8.8-9.2	Transparent	2.1	Y	Y	Y	N	C	N	N
	Syntilo 9930	Medium Duty	Oil-Rejecting	8.9-9.4	Transparent	2.3	Y	Y	Y	N	C	N	N
	Syntilo 9930 BF	Medium Duty	Oil-Rejecting	8.1-9.1	Transparent	2.1	Y	Y	Y	N	C	N	N
	Syntilo 9926	Medium to Heavy Duty	Oil-Rejecting	8.5-8.9	Transparent	2.1	Y	Y	Y	N	C	N	N
	Syntilo 9904	Medium to Heavy Duty	Oil-Rejecting	8.8-9.2	Transparent	1.9	Y	Y	Y	N	C	N	N
	Syntilo 9954	Heavy Duty	Oil-Rejecting	8.0-8.8	Transparent	1.5	Y	Y	Y	N	Y	N	N
	Syntilo 9974	Heavy Duty	Oil-Rejecting	8.7-9.3	Transparent	1.4	Y	Y	Y	N	Y	N	N
	Syntilo 9974 BF	Heavy Duty	Oil-Rejecting	8.7-9.5	Transparent	1.4	Y	Y	Y	N	Y	N	N
	Syntilo MR 9974 BF	Heavy Duty	Oil-Rejecting	8.7-9.4	Transparent	1.4	Y	Y	Y	N	Y	N	N
	Syntilo 1023	Medium Duty	Oil-Dispersing	9.1-9.5	Transparent	1.6	Y	Y	Y	N	C	N	N
	Syntilo 2109	Medium Duty	Oil-Absorbing	9.1-9.6	Transparent	1.8	Y	Y	Y	N	Y	N	N
MULTI-METAL	Syntilo 9828	Light to Medium Duty	Oil-Rejecting	8.2-8.7	Transparent	2.2	Y	Y	Y	Y	Y	N	N
	Syntilo 9918	Medium to Heavy Duty	Oil-Rejecting	7.4-7.8	Transparent	1.7	Y	Y	Y	Y	Y	Y	N
	Syntilo 9913	Heavy Duty	Oil-Rejecting	7.2-7.6	Transparent	1.3	Y	Y	Y	Y	Y	Y	N
	Syntilo CR 68	General Carbide Grinding	Oil-Rejecting	8.9-9.5	Transparent	3.0	Y	Y	Y	N	C	C	Y

DISCOVER THE TRANSFORMATIONAL POWER OF CASTROL® SYNTILO® AT  
[WWW.CASTROL.COM/INDUSTRIAL-US](http://WWW.CASTROL.COM/INDUSTRIAL-US)

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