

# USE THE HEAT OF HIGH-SPEED MACHINING TO TRANSFORM PERFORMANCE



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

 **SYNTILO**

# HIGH-SPEED PERFORMANCE WITHOUT COMPROMISE



Manufacturing companies are under pressure to turn around components faster than ever before. Responding to this change, shop floors are using high-speed machining techniques.

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 a clever approach.

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

The clean synthetic technology behind Castrol Syntilo offers the cooling properties of water. The magic happens when the temperature rises and the lubricating components in Castrol Syntilo are released. It then transforms from a clear fluid into a lubricating emulsion to provide the right levels of lubrication to the cutting edge.

The result is high-speed machining performance, with outstanding finish and tool life.

## TRANSFORMATIONAL METALWORKING FLUIDS TO MEET A VARIETY OF NEEDS

Our Liquid Engineers have applied their deep understanding of developing synthetic cutting fluids and the demands of high-speed machining to create products that meet different machining requirements.

The Castrol 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.

# 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.



## PROVEN BENEFITS DELIVERED BY CASTROL SYNTILO

### COST SAVINGS

Having replaced neat-oil technology with a Castrol Syntilo<sup>1</sup> product, a manufacturer extended its tool life by 20% and rapidly reduced annual product usage by 90%.

Using a Castrol Syntilo<sup>2</sup> product, an aerospace manufacturer drastically increased sump life from two weeks to over six months and dramatically reduced coolant use and waste disposal.

A fuel-system manufacturer saved over \$19,000 a year through reduced system change over and downtime costs after switching from a soluble coolant to a Castrol Syntilo<sup>3</sup> product for its centreless grinding application.

What's more, switching to Castrol Syntilo<sup>4</sup> to broach difficult-to-machine parts enabled an aerospace organisation to reduce its cycle time by 30%, cutting over a minute from the time to machine each part.

A large aerospace engine manufacturer switched from using heavy-duty chlorinated neat oils to broach a variety of difficult-to-machine alloys to Castrol Syntilo<sup>5</sup>. This more than doubled RAM speed and reduced stroke times by over two-thirds – and the reduction in cycle time, coolant usage and waste costs saved the company a massive \$870,000.

### IMPROVED WORKING ENVIRONMENT

Concerns about Health and Safety, specifically surrounding the fire risk of using neat oil, resulted in a company switching to a Castrol Syntilo<sup>6</sup> product, virtually eliminating fire risk and oil mist.

A manufacturer of crankshafts and con rod borers decided to deploy a boron-free Castrol Syntilo<sup>7</sup> product after experiencing bio-resistance and coolant stickiness. This almost completely removed both residues, and the need for tankside additives.

Not all products are available in all locations. Please consult your Castrol representative or refer to the Lubricant Oracle at [castrol.com](http://castrol.com).

<sup>1</sup>Castrol Syntilo 9975 BF - <sup>2</sup>Castrol Syntilo 9954 - <sup>3</sup>Castrol Syntilo 9930 - <sup>4</sup>Castrol Syntilo 9954 - <sup>5</sup>Castrol Syntilo 9954 - <sup>6</sup>Castrol Syntilo 9974 BF - <sup>7</sup>Castrol Syntilo 9930

**Please contact us today for further information.**

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Produced by Lubricants UK Ltd. Registered office:  
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