



CASTROL® HYSOL® SL 45 XBB

LONG-LASTING, HIGH-STABILITY

CUTTING FLUID FOR AEROSPACE

INTRODUCTION

Castrol® Hysol® SL 45 XBB is our next-generation metalworking fluid, created specifically for the aerospace industry. Hysol SL 45 XBB carries approvals from major aerospace OEMs including Boeing, Bombardier, Airbus and Safran.

It offers superior quality over other cutting fluids, giving manufacturers a better surface finish – and improved component quality. Because it is based on Castrol's successful XBB technology, it offers long-lasting machining performance with up to 90% lower biocide top-ups – and it is formulated without boron, biocides and formaldehyde-releasing agents*, helping aerospace manufacturers to comply with safety regulations.

The soluble cutting fluid is designed for grinding, milling, turning, drilling, reaming, tapping and broaching a range of aluminium, titanium and ferrous alloys.

Castrol Hysol SL 45 XBB is suitable for use in individual single-sump machines as well as centralized systems, giving manufacturers a wide range of possible applications.

Sales Card for Castrol and Distributors'
internal use only

KEY QUESTIONS

Do you need a metalworking fluid that lasts longer and gives better performance? Does your current cutting fluid require constant biocide additives to keep it fresh? Are you struggling to keep the pH of your fluid at the right level, with bacterial growth causing unpleasant odors, poor performance and an unstable emulsion? Is your productivity suffering as you deal with unplanned downtime to replace your cutting fluid or corroded parts, or clean your systems? How are you responding to new safety concerns about boron and biocides in your cutting fluid? Do you require a Boeing, Safran, Bombardier and/or Airbus approved product for your processes?

KEY FACTS

Many soluble metalworking fluids use boron, biocides and formaldehyde additives to combat bacterial growth. Castrol Hysol SL 45 XBB has been formulated without these compounds*, supporting the health and safety of aerospace machining environments in line with current and potential future legislation.

Castrol Hysol SL 45 XBB is clean running, which means manufacturers can experience reduced swarf build-up on their machines and cutting tools, even at lower concentrations.

KEY CLAIMS

Based on Castrol's proven XBB technology, Castrol Hysol SL 45 XBB delivers outstanding machining on aerospace alloys, while maintaining stable, productive manufacturing conditions for longer.

With its dual-buffer technology, Castrol's XBB technology resists bacterial growth and maintains a stable pH without the need for expensive biocide top-ups – so aerospace manufacturers can improve safety, maintain quality and reduce costs.

Castrol Hysol SL 45 XBB is able to achieve this in a formulation that does not include boron, biocides or formaldehyde-releasing agents*, creating a safer working environment for machine operators.

*May contain traces of boron and formaldehyde-releasing agents.

PRODUCT APPLICATION GUIDANCE

	Cast iron	Low-to-medium-alloyed steel	High-alloyed stainless steel	Aluminum alloys	Magnesium alloys	Yellow metals
Grinding	•	• •	• •	• •		• •
Milling, turning (general machining)	•	• •	• •	• •		• •
Drilling	•	• •	• •	• •		• •
Reaming, tapping	•	• •	•	• •		• •
Broaching	•	•	•	• •		• •

- Possible application; please consult a Castrol representative prior to use
- • Suggested core application

Recommended concentrations: Grinding 5–7%, General machining 6–8%, Drilling 7–9%, Reaming/Tapping 8–10%, Broaching 8–10%. Water range 100–800ppm CaCO₃

TECHNICAL CHALLENGES

CHALLENGE: Productivity problems caused by coolants with a short life

Example questions to ask	<ul style="list-style-type: none"> • Do you find machining quality declines over time, until you change your cutting fluid? • Do you think this happens too quickly? Does your cutting fluid last an acceptable length of time? • How often do you have to clean your machines and machining components? • How do you manage waste fluid? • Do your operators experience skin complaints when handling the fluid? • Are there signs of bacterial growth, such as bad odors? 	
Possible customer need	<ul style="list-style-type: none"> • Consistent machining quality over an acceptable period of time with minimal disruption and downtime. 	
Problem implications	<ul style="list-style-type: none"> • Frequent change-out of cutting fluid, leading to higher waste-disposal costs. • Downtime and resources required for cleaning and fluid replenishment. • Expensive biocide additives may be needed. 	<ul style="list-style-type: none"> • Operators may experience skin problems. • Possibility of unpleasant odors and other signs of bacterial degradation. • Poor finish and corrosion may be seen.
Potential solution	<ul style="list-style-type: none"> • Cutting fluids with Castrol XBB technology maintain a stable pH for longer without the need for expensive biocide top-ups. • The resulting extended fluid life means manufacturers can machine high-quality components for longer, and avoid unproductive downtime for cleaning and repairing machines, or replacing the cutting fluid. This reduces coolant consumption and waste-disposal costs. 	



TECHNICAL CHALLENGES

CHALLENGE: Health and Safety compliance without compromising performance

Example questions to ask	<ul style="list-style-type: none">• Are you concerned that complying with legislation today and in the future could compromise your metalworking performance?• Does your current cutting fluid comply with the EU's 10th ATP?• Will you have to change your current cutting fluid to comply with future legislation?• Do you have issues with cleanliness or residues on your machines and parts?
Possible customer need	<ul style="list-style-type: none">• Hassle-free compliance.• The ability to continue working effectively while complying with possible future legislation.
Problem implications	<ul style="list-style-type: none">• Operators may have to find new metalworking fluids to comply with possible future legislation.• Compliance with current and future laws may compromise the performance of the cutting fluid.
Potential solution	<ul style="list-style-type: none">• Castrol Hysol SL 45 XBB is compliant with the EU's 10th adaptation to the ATP, because it is formulated without boron, biocides or formaldehyde-releasing agents,* and no DCHA.• Even though Castrol Hysol SL 45 XBB is formulated without boron, biocides and formaldehyde-releasing agents,* it is resistant to degradation for longer, and can provide a superior cutting finish for longer than other conventional fluids.

CHALLENGE: Compatibility with different metals and applications

Example questions to ask	<ul style="list-style-type: none">• Do you need a cutting fluid that is suitable for a wide range of metals and applications?• Does your current cutting fluid stain your materials and tools?
Possible customer need	<ul style="list-style-type: none">• Manufacturers require a cutting fluid that's adaptable to different metals and applications.
Problem implications	<ul style="list-style-type: none">• The cutting fluid needs to effectively machine different metals without staining or corrosion.
Potential solution	<ul style="list-style-type: none">• Castrol Hysol SL 45 XBB is suitable for grinding, milling, turning, drilling, reaming, tapping and broaching a wide range of aluminum, titanium and ferrous alloys,• Castrol Hysol SL 45 XBB has been tested under laboratory conditions on 2000 and 7000 series aluminium at 10% concentration with no staining after 24 hours.• It has also been tested at 6% for 48 hours on 383, 6063 and 7075 Aluminum, C1100 Copper and C2801 Brass.

Current OEM Approvals:

Safran
Airbus
Bombardier
Boeing

For further information, the Product Data Sheet and the Material Safety Data Sheet, please visit thelubricantoracle.castrol.com