CASTROL® ALUSOL® SL 51 XBB
ALUMINUM METALWORKING FLUID

Sales Card – Internal use only (Castrol and Distributor)

INTRODUCTION

Castrol® Alusol® SL 51 XBB is a soluble metalworking fluid for multipurpose machining of aluminum alloys and low-to-medium-alloyed steels. It is suitable for a wide range of applications from grinding to broaching, as well as drilling, deep drilling, milling, turning, reaming and tapping.

Castrol Alusol SL 51 XBB is suitable for large central systems and single-sump machines. It is free from boron, biocides, chlorine and nitrite.

Castrol Alusol SL 51 XBB is suited for machining applications across a range of markets and sectors, including automotive component manufacturing, machinery manufacturing and fabricated metal goods.

KEY QUESTIONS

What would it mean if you could extend the life of your metalworking fluid? Would production efficiency be improved by less downtime for refills or cleaning? How would your workers react if bad coolant odors were eliminated? Would less fluid waste to dispose of mean reduced costs? Would you see a benefit in reducing the handling and use of biocides to maintain your system?

KEY FACTS

Castrol estimates that in around 50% of cases, the biocides used in soluble metalworking fluids are based on formaldehyde. These can degrade over time, especially in warm factory conditions, which is one reason why contamination from bacteria and fungi can occur.

Castrol Alusol SL 51 XBB is formulated using Castrol unique technology, proven to maintain pH at a constant level and assure constant productivity for longer than standard cutting fluids.

Castrol Alusol SL 51 XBB provides precision performance while machining aluminum without compromising your productivity.

KEY CLAIMS

Castrol Alusol SL 51 XBB can remain effective for longer than conventional machining fluids because it neutralizes acids from bacteria and fungi and keeps the pH where it should be, for longer than other standard cutting fluids*.

Castrol Alusol SL 51 XBB is formulated to produce a high quality finish when machining low-to-medium-alloyed steels and aluminum alloys.

Castrol Alusol SL 51 XBB reduces or can eliminate the need for biocide additives.

Castrol Alusol SL 51 XBB can save up to 30%** in overall fluid top-up volumes.

Castrol Alusol SL 51 XBB is free from boron, formaldehyde-based biocides, chlorine and nitrite.

* Proven in lab tests and seen in real production conditions.

** Based on the experience of four customers switching from standard aluminum cutting fluids

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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	•			••		•

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

TECHNICAL CHALLENGES

CHALLENGE: Address productivity problems caused by conventional coolants		
Example questions to ask	• Do operators complain of foul-smelling coolants? • How do you manage waste coolants? How often do you have to clean out lines? • Do you find machining quality declines over time, until you change coolant? • How quickly does that happen?	• Do you have difficulty maintaining fluids to avoid downtime? • Do you spend a significant amount of time (up to 4 hours) conducting daily tests and repairs to deal with bacteria? How often are you handling and using biocides to maintain system stability?
Possible customer need	• Consistent machining quality and performance at the lowest total system cost and with minimum disruption	
Problem implications	• Frequent change-out of coolant, leading to waste-disposal costs • Downtime; resources employed in cleaning • Use of biocide additives	• Filter blockage • Unpleasant odors • Poor finish and corrosion may be seen
Potential solution	• Castrol Alusol SL 51 XBB shows excellent resistance to microbiological breakdown without the need for biocide additives. Castrol Alusol SL 51 XBB neutralizes acids from bacteria and fungi and keeps the pH where it should be, for longer than other standard cutting fluids*. This resistance to coolant breakdown also lowers the risk of poor machining performance or equipment corrosion. • In field trials, Castrol Alusol SL 51 XBB has been shown to extend system life compared to the metalworking fluids that contain formaldehyde-releasing biocides previously used. Extending system life helps reduce unproductive downtime for recharging, and means that less fluid is required, and less waste is generated. • Castrol Alusol SL 51 XBB is proven to maintain pH at a constant level and assure constant productivity for longer than other standard cutting fluids, reducing or eliminating the need for biocides. Castrol Alusol SL 51 XBB is boron and biocide free.	

* Based on titrating 9 fluids until a pH of 8.5 is reached.

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TECHNICAL CHALLENGES

CHALLENGE: Achieve excellent machining performance	
Example questions to ask	• What product concentration do you currently use? Do you have problems with corrosion at low concentrations? • Do you find swarf, fines or build up in the cutting area (creating a built-up edge)?
Possible customer need	• Consistently high machining performance and low total cost of operations
Problem implications	• Inadequate lubrication can lead to high costs of replacement tooling or rejection of components • Swarf and fines can lead to poor surface finish, and diminished tool lifetime and machining efficiency • More drag-out means that higher top-up concentrations may be required • Corrosion at low concentrations can lead to rejection of parts (by customer or as waste in factory)
Potential solution	• Castrol Alusol SL 51 XBB is formulated to help protect machine tools and produce a high-quality finish when machining low-to-medium-alloyed steels and aluminum alloys • The excellent wetting properties of Castrol Alusol SL 51 XBB help to keep machines clean and free from swarf build-up • Because drag-out rates are low with Castrol Alusol SL 51 XBB, top-up concentrations also tend to be low, which helps to reduce the total amount of fluid used • Castrol Alusol SL 51 XBB maintains machining performance and helps to protect against corrosion, even at low concentrations,* so less fluid may be needed, helping to reduce overall costs

*See recommended concentrations in product data sheet.

CHALLENGE: Water compatibility	
Example questions to ask	• Do you have any problems with the emulsion stability of your metalworking fluid? • Do you currently use deionized water or water additives?
Possible customer need	• Hassle-free production line • Low total cost of operations
Problem implications	• Expense of using deionized water or additives to avoid a poor finish
Potential solution	• Castrol Alusol SL 51 XBB is stable over a wide range of water hardness (100 – 1500ppm $CaCO_3$) and may therefore eliminate the need for deionized or reverse osmosis treated water • Castrol Alusol SL 51 XBB is low-foaming in recommended water conditions (100 – 1500ppm $CaCO_3$) at *typical* operating pressures

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

OEM APPROVALS

Fehlmann AG	OEM Approved
Grob Werke GmbH	OEM Listed
Junker Maschinenfabrik GmbH	OEM Approved
Niles-Simmons, Chemnitz, GY	OEM Endorsed