



How-to

8 Facts You Don't Know About ... Metalworking Fluids

Bill Leventon | Mar 01, 2017

What You Need to Know

There are differences between all metalworking fluids.
A coolant management plan may be right for some companies.
Consider the techniques to avoiding contaminated fluid.

Insider tips about the most essential product used to keep your machine running smoothly.

If you're involved in operating machine tools, then you know the importance of metalworking fluids (MWFs). And yet, even though it's a regularly used, familiar product, it doesn't always get the attention it deserves. In fact, there are several nuances to consider when choosing the right MWF for your machines, tools and materials.

We challenged Aaron Wright, director of commercial development, and Eric Hefner, senior technical service chemist, both from *Master Chemical Corp.*, a leading metalworking fluid manufacturer based in Perrysburg, Ohio, to reveal eight facts about metalworking fluids that we didn't already know.

1. All MWFs are NOT the same.

Metalworking fluids can differ substantially, particularly when it comes to quality, says Wright. It's important for users to know that higher-quality MWFs can extend the life of machined parts, boost the effectiveness of their tooling and reduce scrap in the long run. Plus, higher-quality MWFs will last longer, decreasing the amount you'll need to use over time.

2. There's more to consider than cost.

Focusing exclusively on the price per gallon could be a costly mistake. To determine whether an MWF is truly a good value, users should consider factors such as how long a metalworking fluid will last in the sump and whether it will shorten tool life and increase machine downtime compared with more expensive alternatives.

3. Replacing MWFs could lead to other changes.

Changing out your metalworking fluid can be an opportunity to look at other parameters as well. If you've switched to a higher-performance fluid, for example, you may be able to increase your speeds and feeds, boosting the rates at which you can turn out parts at the required standards of excellence.

4. MWFs need special attention.

Some people think they can evaluate the condition of MWFs just by the smell or feel of the fluids. Wrong! You need to test the product to make sure it's in an optimal state. If you don't, it can lead to problems like tool corrosion or, even worse, skin conditions for anyone who comes in contact with the fluids. On the other hand, some companies have a whole team dedicated just to coolant management, which involves monitoring and testing the fluid and making adjustments when necessary.

5. Your MWF may not comply with the latest regulations.

Right behind the food and drug industry, the specialty chemicals business is probably the second most regulated in the world. However, regulations change all the time, so it's important to stay connected to what's happening in the industry to remain in compliance.

6. MWFs change (for the worse) while in use.

Metalworking fluids may be biodegradable while in their most pristine form. However, MWFs can quickly become contaminated during the machining process, both by the materials being machined and by exposure to machine-tool oils.

7. Local regulations govern MWF disposal.

Municipalities have jurisdiction over most MWF disposal issues. Metalworking companies are asked all the time about how to dispose of fluids. The answer is to contact your local treatment plant and find out what's permissible.

8. MWF isn't just a maintenance item.

If you're involved in machining, don't make the mistake of relegating MWFs to secondary status; give respect where respect is due. These are critical components of any metal manufacturing operation and should be treated as such.



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Key Takeaways

- Choosing the best metalworking fluid can optimize your machining process.
- Some metalworking shops have a whole team dedicated to coolant management.
- Only government regulations can dictate how to properly dispose of MWFs.

What is your favorite MWF to use and why?

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