Metalworking Fluids Technical Feature (March 2012)

News/Events

- News Note: STLE provided a technical briefing to select EPA personnel. In particular, STLE focused on technical issues pertaining to formaldehyde-releasing biocides, mist control and waste treatment. The goal is to help EPA produce informed, technically correct regulations. The briefing was made by STLE members Dr. Fred Passman and Dr. Neil Canter. Watch for details in the June issue of TLT. Watch for details of the presentation, as provided by Robert Gresham in the June issue of TLT.
- Event Highlight: SCAQMD/ILMA Symposium – this joint symposium covered Rule 1144 – Metalworking Fluids and Direct-Contact Lubricants. At this link, you’ll find event info, the agenda, presentation slides and the recording of the entire event.
- Event Highlight: UEIL Conference on MWFs
  - Podcast interview with John Burke and Greg Foltz, Technical Track Chairs for 2 of the 3 Tracks: Innovation, Application and Regulation (John and Greg covering the first two).
  - TLT article: Overview of the UEIL Conference, by Robert Gresham

Articles

- Resources for the MWF Professional: includes links to magazines and books
- White Paper: Development of Guidelines for Using and Maintaining Metalworking Fluids
- Cover Stories:
  - The Regulatory Future of Antimicrobial Pesticides
  - Additive Trends: Zapping SASP, Cutting Costs and Tackling Toxins
  - Metalworking Fluid Mist: Strategies for Minimizing Exposure
  - Monitoring MWFs
- Lubrication Fundamentals Column:
  - Basics of MWFs
  - The Mysterious World of MWF Additives
  - Metalworking Fluids: What’s the Risk?
  - I get misty...no more!
  - STLE’s Certified Metalworking Fluid Specialist
  - MWF Certification – A Coat of Arms for Individuals & Industry
  - Certified Metalworking Fluid Specialist Information
- Shop Floor Column:
  - Biological Control in MWFs
  - Four MWF Lessons
- Practical Applications Column:
  - Selecting the ‘Perfect’ MWF
  - Microbial problems in MWFs
• Tech Beat Feature: **New Test Method for Detecting Microbes**

• Worldwide Column: **Monitoring and Maintaining MWFs**

• Peer Reviewed/Technical Papers:
  
  o [Experimental and Statistical Design Considerations for Economical Evaluation of MWFs Using the Tapping Torque Test](#)
  
  o [Metalworking Fluid Microbes – What We Need to Know to Successfully Understand Cause-and-Effect Relationships](#)
  
  o [Variables Affecting Mist Generation from Metal Removal Fluids](#)
  
  o [The Influence of Base Oil on Misting in Metal Removal Fluids](#)
  
  o [Current Approaches in Design and Supply of MWFs](#)
  
  o [Evaluation of Aged and Recycled MWFs by the Tapping Torque](#)
  
  o [Effects of Cross-Flow Filtration and Tramp Oil Removal on the Components and Performance Properties of MWFs](#)
  
  o [Ultraviolet Treatment of Microbially Contaminated MWFs Using a Thin Film Contactor](#)

• Blast from the Past (past articles from TLT, previously known as Lubrication Engineering, or LE)
  
  o LE 2002: **Reassessing the Health Risks Associated with Employee Exposure to MWF Microbes**
  
  o LE 2001: **Ecological and Environmental Aspects of Cutting Fluids**
  
  o LE 1998: **Opportunities and Market Trends in MWFs**
  
  o LE 1996: **Amine Carboxylates – Amines in MWFs**
  
  o LE 1996: **Dermal Carcinogenicity Studies of MWFs**
  
  o LE 1996: **Using Complex Polymeric Esters as Multifunctional Replacements for Chlorine and Other Additives in Metalworking**
  
  o LE 1993: **Biostatic Fluids, Friendly Bacteria and Other Myths in MWF Microbiology**
  
  o LE 1993: **The Chemistry of Sulfonates as MWF Additives**
  
  o LE 1992: **Toxicity of MWFs: Myths and Reality - A Chemist's Perspective**
  
  o LE 1992: **Evaluation of Overbased Sulfonates as Extreme-Pressure Additives in MWFs**
  
  o LE 1990: **Metalworking Fluid Additives for Waste Minimization**
  
  o LE 1989: **Biocide Usage in Metalworking Fluids – The Effect of Treatment Patterns on Efficacy**
  
  o LE 1989: **Field Evaluation of Octhilinone as a Fungicide for Metalworking Fluids**
  
  o LE 1989: **Metalworking Fluids – A Geographical Industry Analysis**

**Books**

• **Metalworking Fluids, 2nd Edition** by Jerry P. Byers. [Read the review](#)
  
  • Basic Handbook of Lubrication, 3rd Edition – [Spiral Bound](#) or [Perfect Bound](#)
  
  • Handbook of Biocide and Preservative Use, by H.W. Rossmoorre
  
  
  • Machining Data Handbook, 3rd Edition, compiled by the Technical Staff of the Machinability Data Center Institute of Advanced Manufacturing Sciences
- **ASM Metals Handbook, Vol 16: Machining**
- Modern Metal Cutting - a practical handbook, Sandvik Coromant
- **Cutting and Grinding Fluids: Selection and Application, 2nd Edition**, by Society of Manufacturing Engineers
- **Coolant Filtration, 2nd Edition - Additional Technologies** by James J. Joseph
- **See the full list**

**Links**
- [KEN – New MWF Health, Safety and Environmental website](#) | Article – Overview of KEN
- [MWF Mag](#)
- [CDC Resources on MWFs](#)
- [OSHA’s MWF Safety & Health Best Practices Manual](#)
- [Prevention of Skin Problems When Working with Metalworking Fluids](#)
- [ILMA/SHERA Dermal Assessment Guide](#)
- Institute of Advanced Manufacturing Sciences/Waste Reduction and Technology Transfer Foundation: [Shop Guide to Reduce the Waste of Metalworking Fluids](#)

**Podcasts/Videos/Interviews**
- Podcast: Microbicides and Recent EPA Actions with Fred Passman
- Podcast: Metalworking Fluid Additives – Amines and Microbicides, with Jerry Byers
- Podcast: Metalworking and Chemical Additives, with Neil Canter
- Podcast: Metalworking Fluid Management with Donald Smolenski
- Video Interview: Robert Austin gives an overview of the CMFS designation and how to obtain it.

**Education** (Online Courses, Webinars, Regional Courses, see AM section for AM Education)
- Online Course: [Metalworking Fluids Short Course](#)
- Webinar Recording: [VOC Emissions from Metalworking Fluids](#), presented by Michael Morris and Uyen-Uyen Vo, South Coast Air Quality Management District (also presenting at the SCAQMD/ILMA Symposium)
- FREE STLE University Webinar: [Volatile Organic Compounds in Metalworking Fluids](#), presented by John Burke, Houghton International
  - Article (AM presentation): **A New Method for the Determination of Volatile Organic Compounds in MWFs and Rust Inhibitors** by John Burke, Michael Pearce, B. Blithe, and John Howell
- Webinar Recording: [Emerging Issues in MWF Microbiology – Biofilm Control](#), presented by Fred Passman
- Webinar to Watch For: [Health and Safety Update & Regulatory Exposure Limits for MRF Mist](#), presented by John Howell, GHS Resources, Inc. (December 2012)
FREE Section Webinar: Hydrophilic-Lipophilic Balance in Metalworking Fluids

Regional Education Course – Metalworking Fluid Certificate Course – look for it in 2013, or host the course at your location. For more information, contact us. Get a quick preview of some brief course concepts: example 1 and example 2, provided by Fred Passman, one of the course instructors | Course Photos

Annual Meeting Highlights

Education Courses
  o Metalworking Fluids 115: Metal Removal Fluids with instructors: Neil Canter, John Steigerwald, Al Eachus, Fred Passman, John Burke, and Alan Eckard (Sunday, May 6)
  o Metalworking Fluids 125 – Health, Safety and Microbiology Education Course, includes instructors: Terry Williams, Al Eachus, Fred Passman, Eugene White, and John Howell (Wednesday, May 9)
  o Principles of Metallurgy (co-hosted course by STLE and ASM International), with instructor Michael Pfeifer, Industrial Metallurgists, LLC (Wednesday, May 9)

Webcast Recording (free access): MWF Hot Topics Education Course Summary Presentation (Presented by Neil Canter in a technical session at the 2011 AM)

Webcast Recording (free access): Award-Winning Paper Presentation Real-Time Testing of Bioburdens in MWFs Using Adenosine Triphosphate as a Biomass Indicator, presented by Fred Passman | Read the paper

Commercial Marketing Forum Presentations, from past Annual Meetings:
  o Afton Chemical Corp.: TecGARD™ Metalworking Emulsifiers | TecGARD™ Metalworking Additives | Environmentally Friendly EP Additives for Metalworking Applications
  o ANGUS Chemical Co.: CORRGUARD EXT Amino Alcohol: Flexibility and Added Value for MWF Formulators | CORRGUARD EXT Amino Alcohol: New Innovation in Specialty Additives Delivering Improved MWF Life and Performance
  o Arch Chemicals, Inc.: New Antimicrobial Technology from Arch Biocides
  o Arkema Inc.: Arkema and Metalworking
  o Huntsman: Bishydroxyethyl Methylamine
  o LANXESS Corp: Newly Approved Biocide for Lubricant Applications
  o LANXESS Corp: PCMC - The Classic Preservative for MWFs and Lubricants
  o Lonza: Lonza’s New Antimicrobial Technology
  o The Lubrizol Corporation: Lubrizol® 5333 – The Next Generation Sulfurized Additive | Advanced Emulsifier Technology for Renewable Resource-Based MWFs | Reducing the Impact of MWF and Slideway Lubricant Contamination
  o Stepan Company: Stepan Metalworking Additives