



Health, Safety and Environmental Affairs – The Material Safety Data Sheet (MSDS)

The Hazard Communication Standard requires that companies using hazardous materials maintain a file of the current MSDS (Material Safety Data Sheets) for all the materials listed in their Hazardous Material Inventory. It is the user's responsibility to request that the organization supplying the product deliver the current MSDS to them. Master Chemical maintains pdf copies of the most current MSDS on our website so that they are readily available to our customers.

There is no standard or required MSDS format but most formulators are using a format proposed several years ago by ANSI, adopted by the automotive and aerospace manufacturing communities, and approved but not required by OSHA. This form has sixteen (16) sections:

1. **Chemical Product and Company Identification** – this section contains the proper name and identification of the product as it appears on the containers etc. and the name and contact information of the product's manufacturer.
2. **Composition/Information on Ingredients** – this section will list all the hazardous chemicals present in the product at greater than 1.0%.
3. **Hazards Identification** – this section would provide "first responders" with information about how to identify the subject material if it was spilled, and the potential health hazards associated with a spill or fire involving the product. It also contains information about the health affects of long term exposure.
4. **First Aid Measures** – this section provides an overview of first aid that might be necessary after exposure.
5. **Fire Fighting Measures** – this section deals with fire fighting measures.
6. **Accidental Release Measures** – Section 6 deals with the best measures for clean up after a spill.
7. **Handling and Storage** – this section deals with the proper handling and storage of the material.
8. **Exposure Controls/Personal Protection** – Section 8 deals with exposure control methods and personal protective equipment that may be appropriate in dealing with the product.
9. **Physical and Chemical Properties** – lists the relevant physical properties of the material.
10. **Stability and reactivity** – this section discusses the issues associated with what the product will react with and what the results might be.
11. **Toxicological Information** – in this section, any available information on the toxicology of the product is presented. Master Chemical does testing with independent laboratories in this area and the results are presented.
12. **Ecological Information** – any information about the ecological impact of the product is presented here.
13. **Disposal Considerations** – any particular issues associated with disposal are outlined in this section.
14. **Transport Information** – Section 14 deals with applicable DOT (Department of Transportation) regulations or special transportation classifications and issues.
15. **Regulatory Information** – this section deals with any reporting that may be required by federal regulation.
16. **Other information** – Section 16 is a "free entry" area in which the manufacturer can communicate information about the products' health and safety that does not fit elsewhere. Master Chemical reports HMIS and NFPA data here.

As with all other governmental documents, MSD sheets have their own set of abbreviations which include:

1. **AL or Action Level** – this indicates the point (the concentration of the material in air) at which action must be taken to address the issue.
2. **C or Ceiling** – the maximum exposure level that an employee may be subjected to during the work day.

3. **IDLH or Immediately Dangerous to Life and Health** – this is the maximum level that a worker could be exposed to in the event of protective equipment failure without permanent injury occurring – primarily applicable to respirators etc.
4. **LC-50 or Lethal Concentration 50%** – the concentration of the material in the air that could be expected in one dose to kill 50% of the test animals.
5. **LC-LO or Lethal Concentration Low** – the lowest dose other than by inhalation that can be expected to kill humans.
6. **LD-50 or Lethal Dose 50%** – the lowest level whereby exposure to the product by other than inhalation it can be expected to kill 50% of a specific animal population.
7. **LD-LO or Lethal Dose Low** – the lowest level that could cause death in a specific animal population when exposed by other than inhalation. Less than 24 hours is considered acute and greater than 24 hours is chronic or subacute.
8. **mg/m³ or Milligrams per Cubic Meter of Air** – a measure of the density of solid particles in an aerosol.
9. **ppm or Parts Per Million** – the number of particles or units per million units. 1ppm equals 0.0001%.
10. **PEL or Permissible Exposure Limit** – this is the maximum amount of a product in air that a person should be exposed to.
11. **REL or Recommended Exposure Limit** – this is the maximum amount of a product in air that a person can be exposed to without danger of injury.
12. **STEL or Short-Term Exposure Limit** – a 15 minute time weighted average of the maximum exposure. This value should not be exceeded during the work day.
13. **TLV or Threshold Limit Value** – the maximum concentration of the material in air that people can be repeatedly exposed to without adverse health effects.
14. **TLV-TWA or Threshold Limit Value** – Time-Weighted Average – a time weighted average for an 8-hour work day and 40-hour week for repeated exposure to airborne material.
15. **TLV-STEL or Threshold Limit Value-Short-Term Exposure Limit** – the maximum amount of material that a person should be exposed to in a 15 minute time frame.
16. **Threshold Limit Value-Ceiling** – this is the maximum amount that anyone should be exposed to.
17. **Time Weighted Average** – the average amount of material that a person is exposed to in an 8-hour day or 40-hour week.
18. **TC-LO or Toxic Concentration Low** – the lowest level of airborne chemicals where any toxic effect is observed in any animal.
19. **TD-LO or Toxic Dose Low** – the lowest dose by other than inhalation that produces a toxic effect in any animal.

The MSDS is a source for a great deal of information about how to safely use a product and an effort to read and understand them is well worth while. While metal-working fluid chemistry is designed to be very “operator friendly”, it is chemistry and as such should be treated with proper respect.

NOTES

1. The information in this TRIM® Technical Bulletin should not be substituted for the advice of a knowledgeable attorney and/or a specialist in health and safety compliance.
2. Master Chemical provides a web based copy of the most current MSDS for all current products in a downloadable, printable pdf format on our website at www.masterchemical.com.
3. It is generally considered sufficient to update your MSDS files on a yearly basis.
4. For materials that are designed to be diluted for use, as are most TRIM® products, the MSDS applies only to the concentrate as it comes from the drum, not the diluted working solution.
5. For additional information on this subject contact your Master Chemical District Manager, Authorized Distributor, Tech Line (800-537-3365 North America only) or our website (www.masterchemical.com/8/8c-frames.html).



master chemical corporation

501 West Boundary, Perrysburg, OH 43551-1263 • Phone: 419-874-7902 • Fax: 419-874-0684 • www.masterchemical.com

TRIM® is a registered trademark of Master Chemical Corporation
© 2005 Master Chemical Corporation • Revised 10/25/05

Because conditions of use are beyond our control, no warranty, guarantee or representation is made or intended in connection with the use of this product.