

# Use Toxicity Ratings to Help Ensure Worker Safety

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Aerosol sprays which volatilize a solvent can expose workers to fumes.

There are several dimensions to worker safety around chemicals: toxicity, corrosivity and flammability to name a few. While the risk of fire and corrosiveness may be well-understood, Mike Jones, MicroCare Vice President, feels that most end-users may not clearly understand toxicity and mistakes could be made that put workers at risk. One type of toxicity rating is “threshold limit value” and is expressed in parts-per-million. These numbers are on any modern safety data sheet and managers should choose products with higher ratings. Here’s where to look, and what to look for.

### Keep Your Score High

The purpose of a toxicity rating is to protect workers from excessive levels of exposures that could be dangerous, either in the short-term or during their working life. Toxicity ratings can be identified in several ways: usually called TLV (Threshold Limit Value), they may also be listed as PEL (Personal Exposure Limit) that are generated by the manufacturer and AEL (Assigned Exposure Limit), that are assigned by a government body. These values are usually (but not exactly) equivalent, with the rating systems working in the same general manner.

Expressed in parts-per-million (ppm), it helps to gauge if a chemistry can safely be used in a workplace. These values may also be specified in milligrams per cubic meter (mg/m<sup>3</sup>) or milligrams per liter (mg/l). High numbers, those approaching 1,000 ppm (the highest rating possible), indicate a safe chemistry, lower numbers indicate a greater risk. A higher score is better as it designates that a larger concentration of exposure could occur without causing adverse effects.

### Time Weighted Limits

The scores estimate worker risk from exposure to the liquid for eight hours per day, five days a week, for a hypothetical thirty-year working career. A lower score means even brief exposure to the chemical may pose hazards. Therefore, a chemical that would warrant greater review might have a TLV of 10-25 ppm. Fluids, cleaners or coatings with a TLV value of 50-100 ppm can be used safely with the proper equipment and training. Fluids with AELs of 100-200 ppm or higher are better still. They may require PPE, but their potential for concern is manageable. A brief note here, these values are not the only statistic to measure the safety of the chemistry. Vapor pressure of the fluid is also worth a note. A high vapor pressure fluid will volatilize easily, possibly putting a higher concentration of solvent vapors near the inhalation zone of the workforce.

“Most exposure limits are ‘time-weighted’ and are designed to prevent long-term damage from exposures lasting days, weeks or even years,” said David Ferguson. “However, this does not take into consideration how the chemical is dispensed. For example, a chemical with a lower exposure may be acceptable when used in properly-designed cleaning equipment. But, this same chemical in a highly emissive application, such as an aerosol spray, could present a higher risk for workers.”



# Tech Article

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## Reduce Risk – Study the Facts



It is essential to obtain as much information as possible concerning the identity of the chemical or chemicals of a product being used. To reduce risk, it is important to read and understand Safety Data Sheet (SDS). This gives specific details on the product's potential hazards and allows users to understand the potential threats and make informed decisions about its use.

Every product will have an SDS. These are organised into several sub-sections for example, identification of the substance and manufacturer; toxicological information; and exposure controls / personal protection.

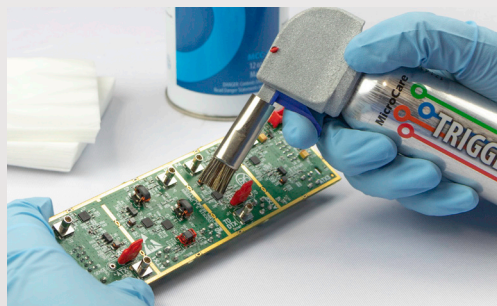
It is important to remember that concentrating on just the TLV figure is insufficient for a comprehensive assessment. Look at the whole picture to determine safety. Look at key aspects including flammability, storage, handling, and disposal. All of these details need to be included in any safety analysis.

## Choose Wisely

When looking at your cleaning processes find chemistries that address TLV concerns. There is no standardized certification about hazards and safety but do your research. MicroCare is paving the way with progressive and careful chemistries. We have developed cleaning chemistries that consider safety and hazard risks, while still cleaning effectively. Before selecting a cleaning, contact a safety expert if you are unfamiliar with these issues and worried about the implications. The chemistry is out there. Be proactive, examine your cleaning products' SDS and choose wisely.

Revision date: 2/23/2018	Revision: 63	Supersedes date: 8/10/2017
		
<b>SAFETY DATA SHEET</b>		
<b>DC1 - NO-CLEAN FLUX REMOVER - VERICLEAN, AEROSOL</b>		
According to Appendix D, OSHA Hazard Communication Standard 29 CFR §1910.1200		
<b>1. Identification</b>		
<b>Product Identifier</b>		
<b>Product name</b>	DC1 - NO-CLEAN FLUX REMOVER - VERICLEAN, AEROSOL	
<b>Product number</b>	MCC-DC1101, MCC-DC1105, MCC-DC1, MCC-DC110Y, MCC-DC115A	
<b>Synonyms; trade names</b>	"DC1 - VeriClean Deluxer/Degreaser, Plastic Safe"	
<b>Recommended use of the chemical and restrictions on use</b>		
<b>Application</b>	Cleaning agent.	
<b>Details of the supplier of the safety data sheet</b>		
<b>Supplier</b>	MICROCARE CORPORATION	
<b>Manufacturer</b>	MICROCARE CORPORATION 595 John Downey Drive New Britain, CT 06051 United States of America CAGE: OATV9 Tel: +1 800 838 0125, +1 860-827-0626 Fax: +1 860-827-8165 techsupport@microcare.com	
<b>Emergency telephone number</b>		
<b>Emergency telephone</b>	CHEMTREC 1-800-424-9300 (within the U.S.) +1 703-741-5970 (from anywhere in the world)	
<b>2. Hazard(s) Identification</b>		
<b>Classification of the substance or mixture</b>		
<b>OSHA Regulatory Status</b>	This Product is Hazardous under the OSHA Hazard Communication Standard.	
<b>Physical hazards</b>	Flam. Aerosol 1 - H222	
<b>Health hazards</b>	Not Classified	
<b>Human health</b>	Splashes in the eyes may cause redness and irritation. Keep out of the reach of children. See Section 11 for additional information on health hazards.	
<b>Physicochemical</b>	Pressurized container; protect from sunlight and do not expose to temperatures exceeding 50°C. Do not pierce or burn, even after use.	
<b>Label elements</b>		
<b>Pictogram</b>		

An SDS gives specific details on the cleaner's potential hazards and allows users to make informed decisions about its use.



The TriggerGrip™ dispensing system minimizes solvent vapors, improving worker safety.

### About the Author:

Mike Jones, retired Vice President of International Sales for MicroCare, has over 30 years of experience in the critical cleaning industry. He is a prolific writer and educator focusing on critical cleaning in general and vapor degreasing and benchtop cleaning in particular.

For more information, visit [www.microcare.com](http://www.microcare.com).



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