



TECHNICALLY SPEAKING

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ITW Chemtronics
8125 Cobb Center Drive
Kennesaw, GA 30152

Tel: 800-645-5244 x166

Fax: 770-423-0748

Technical Support:

800-TECH-401

or

mwatkins@chemtronics.com

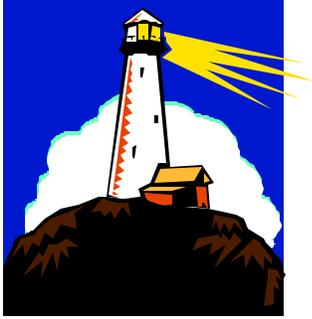
Website:
www.chemtronics.com

Cleanroom Compatibility of ITW Chemtronics Products

From time to time I get inquiries in Technical Support, asking if a particular ITW Chemtronics product is cleanroom grade or cleanroom compatible. Usually this question arises with regard to our duster products, but sometimes also involves our static dissipative products and aerosol solvent cleaners. There is no simple answer to this question. It all depends on the standards the cleanroom user is trying to maintain in his cleanroom operations.

ITW Chemtronics duster products contain 100% 134a, a completely volatile compound that is a gas at room temperature, and which has been filtered to remove all particulates 0.2 microns or larger. So the product itself is inherently cleanroom compatible for Class M1 cleanrooms (ISO Class 2). However, these products are not packaged in a cleanroom environment, nor is the product packaging design associated with the term "cleanroom". For example, a truly cleanroom compatible product would need to be "double bagged", or packaged in such a manner so as to prevent introduction of particulate contaminants into the cleanroom. The same can be said for all commercial duster products now on the market, even though some vendors claim their dusters are "cleanroom safe". So, while we do not claim cleanroom compatibility, we are no less cleanroom compatible than our competitors. We simply have higher standards regarding what is and is not cleanroom safe.

ITW Chemtronics does not typically promote using a duster product in a cleanroom environment. Even though the duster itself may not add any additional burden of particulates to the air in the cleanroom, use of the duster may scatter particulates that were previously not airborne and therefore not detected. The higher particle count would be attributed to the duster product itself, rather than its improper use. The increase in particle count might not be noticeable in a Class M4 or higher cleanroom, but would probably be detectable and unacceptable in a Class M3.5 or lower environment. The use of duster products should be the decision of the cleanroom operators; they are the ones who determine the particulate standards they need to operate at for their specific cleanroom applications.



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Instead of scattering particulates inside the cleanroom with dusters, particulate contamination is usually collected and removed using solvent-saturated wipes and swabs. The use of saturated swabs and wipes should again be left to the judgment of the users, since they are the ones who determine the particular operating standards for their cleanroom. Dusters are extremely useful and important products, effective in removing dust from electrical components in the field, in so-called “controlled environments, and in Class M6, Class M5 or even Class M4 environments. However, they are not necessarily proper for use in a “classical” cleanroom, or environments controlled to less than Class M4 cleanliness.

ESD products, such as the Static Free™ Mat and Benchtop Reconditioner, which deposit a volatile static-dissipating film, may be considered unacceptable in critical environments, due to the inherent increase in particle count, resulting from volatilization of the solvents they contain. ITW Chemtronics would recommend using such products only in Class M4.5 or higher cleanrooms.

The droplets of liquid produced when any solvent-based aerosol product is sprayed, usually precludes its use in cleanrooms below Class M4. This would include all of the ITW Chemtronics Electro-Wash® Cleaners, Flux-Off® flux removers and Pow-R-Wash™ contact cleaners. Also aerosol coating sprays, such as Konform® conformal coating products are usually not recommended for use in Class M3.5 or lower environments. Even after the solvents and propellants evaporate, finely atomized particles of the coating will add to the particle burden in the cleanroom. Again use of such products in the cleanroom environment should be left up to the cleanroom operator.

The same applies for the all the solvent-based CircuitWorks® products, like the Conductive Pen, Conductive Epoxy, Quick Bond Gel Adhesive Kit, Rubber Button Repair Kit, and the Flux Dispensing and Flux Remover pens. These products give off volatile chemical vapors as they cure. Again, it is really up to the user as to what products he will permit in his own cleanroom.



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ITW Chemtronics holds a position different from other aerosol product manufacturers, because Chemtronics supplies Coventry™ cleanroom products to the operators of critical cleanroom environments. Coventry™ cleanroom swabs and wipes are the only products we manufacture under cleanroom conditions. The manner in which these products have been manufactured and packaged, as well as the materials used in their construction and packaging, have been chosen and processed to insure the lowest particulate count possible. Coventry™ swabs and wipes from ITW Chemtronics are specifically designed for use in any cleanroom environment, whereas our other product lines may not be appropriate for cleanroom applications..

Michael Watkins
ITW Chemtronics
Technical Support