

Recommendations for Demonstrations Used in the Marketing and Sales of Novec 1230 Fluid

The safety of 3M™ Novec™ 1230 Fire Protection Fluid has been evaluated through both short term (acute) and repeat dose (chronic) product testing. In addition, there is a significant amount of human experience based on handling and use during research, development, and testing of fire protection systems. All the testing results and human experience related to Novec 1230 fluid attests to a very large margin of safety associated with this product.

Even though there is a large safety margin known, it is important that fire suppression systems OEMs and those throughout the distribution channel use appropriate care when displaying or demonstrating any industrial chemical, including Novec 1230 fluid.

Precautions

Novec 1230 fluid should be demonstrated and used responsibly. Please read and follow the precautions and other safety related information in the Material Safety Data Sheet (MSDS) and on the product label for Novec 1230 fluid. In addition, it is important to read and follow the guidance provided in the technical documentation for this product. Remember to take appropriate care when demonstrating Novec 1230 fluid in any setting, particularly a non-industrial setting. Precautions should be taken to avoid contact with eyes and to minimize evaporation to room air.

Under no circumstances should anyone ingest Novec 1230 fluid in a product demonstration. Neither body parts, nor animals, should be immersed in Novec 1230 fluid to demonstrate the safety of the material. To do so would be contrary to the principles of responsible chemical management and product stewardship, including those principles expressed in the American Chemistry Council's Responsible Care program. As regulations vary by country, please consult with local marketing and PRL to ensure compliance with local regulations.

Considerations for Demonstrations

In addition to good industrial hygiene and responsible use practices, there are technical guidelines that should be considered when demonstrating the unique attributes of Novec 1230 fluid. Features of the product that are often demonstrated include fast evaporation, lack of residue, high dielectric strength, and fire extinguishing performance.

Novec 1230 fluid is safe for electronics when used in accordance with applicable precautionary information and directions for its intended use. However, devices that contain moving parts that are designed to operate in air may not perform well when submerged in any liquid. One example of this is a hard disk drive. Laptop computers and some hand-held devices contain a hard disk drive that is designed to operate at high rpm in air. These devices may not mechanically perform well when covered with liquid. In addition, most hard disks are coated with a fluorochemical lubricant. This thin layer of lubricant may be removed when in contact with any liquid fluorochemical, including Novec 1230 fluid. Another example is immersing mobile phones into Novec 1230 fluid, calling the phone and/or speaking on the phone prior to complete evaporation of the fluid. While this has no impact on the electronics, it may affect the mechanical operation of the microphone or earpiece, which are designed to operate in air.

Recommended Practices

There are safe and responsible ways to demonstrate the unique properties of Novec 1230 fluid, including the following:

- Pouring vapor from a container to extinguish a small candle fire. Or, a flame from a candle or long match could be lowered into the vapor space of a container of Novec 1230 fluid to demonstrate its extinguishing capability.
- Immersing books, paper currency, artwork, Post-It® Notes, etc. into the fluid to demonstrate its quick drying property without damaging paper products. To demonstrate these properties, the items that were immersed in the fluid may be given to the audience to see/feel for themselves the lack of damage and the ability to retain their original form even after being submerged in Novec 1230 fluid.
- Inserting a computer monitor, television, digital clock, etc. into a container containing Novec 1230 fluid to demonstrate its electrical non-conductivity. (Evaluate your demonstration area prior to the demonstration to verify that ventilation and air exchange is adequate to maintain safe conditions.)
- Pour Novec 1230 fluid vapor in front of a projector beam to visually demonstrate to an audience the vapor shadow projected on the screen.
- Remind audiences that Novec 1230 fluid is always stored in closed containers and is discharged as a gas from total flooding applications. Demonstrations of the product in its fluid form are for illustrational purposes only.

Practices that are NOT Recommended

- Immersing body parts or hair into the fluid. Do not immerse hands into the fluid. Use tongs, hooks, or hold the object by the corner while the hand remains out of the fluid.
- Immersing entire computers or any hard drive-containing device into Novec 1230 fluid.
- Pouring fluid onto a laptop keyboard. This may cause the fluid to enter the hard disk drive.
- Do not demonstrate the product in consumer locations (malls, shopping areas, etc.) or residential locations. Industrial chemicals are not meant to be used by or shown to direct consumers. Many public areas require permits prior to use of industrial or professional chemicals or prohibit them. Demonstration at trade shows, conferences or academic setting is acceptable due to the nature of the audience.
- Never use drinking or eating utensils (no drinking cups or glasses should be used to transfer material) to demonstrate or imply in any way that the fluid is “food safe”.
- Personal social media sites are not acceptable venues to market this industrial fluid product.
- All demonstrations of Novec 1230 fluid should be conducted by trained 3M personnel. The general public and members of the media should not conduct the actual demonstrations.
- Do not submerge components that generate significant heat and are sensitive to thermal gradients, especially vacuum evacuated incandescent light bulbs, as the thermal gradient may cause the item to shatter. Use LED or other low heat stable light or component. If unsure, seek consultation with technical service.

Practices that are Always Recommended

- Keep Novec 1230 fluid demonstration containers closed and covered at all times when not in use.
- Keep all water or water-containing products away from Novec 1230 fluid. Not doing so may contaminate the fluid and render it conductive and potentially corrosive if exposed to water in an inappropriate manner.
- Keep all solvents (e.g., acetone, alcohols, etc.) away from Novec 1230 fluid. These solvents may cause dissolution of materials of construction and contaminate the fluid.
- Filter Novec 1230 fluid when recovering.
- Ship samples in advance of travel to avoid possible airport delays. Be sure to include an MSDS (Materials Safety Data Sheet) in the shipping package.
- If you must personally transport the fluid, check the sample with luggage and have the sample properly labeled and accompanied by an MSDS.

In Summary

When using Novec 1230 fluid in presentation demonstrations, always maintain the respect necessary for the continued safe use and handling of this product. Always read and follow the precautions and directions for use in the MSDS and product label for the Novec 1230 fluid.

The 3M™ Novec™ Brand Family

The Novec brand is the hallmark for a variety of patented 3M compounds. Although each has its own unique formula and performance properties, all Novec products are designed in common to address the need for safe, effective, sustainable solutions in industry-specific applications. These include precision and electronics cleaning, heat transfer, protective coatings and surface modifiers, fire protection, lubricant deposition and several specialty chemical applications.

3M™ Novec™ Engineered Fluids • 3M™ Novec™ Aerosol Cleaners • 3M™ Novec™ 1230 Fire Protection Fluid • 3M™ Novec™ Electronic Coatings • 3M™ Novec™ Electronic Surfactants

United States	China	Europe	Japan	Korea	Singapore	Taiwan
3M Electronics Markets Materials Division 800 810 8513	3M China Ltd. 86 21 6275 3535	3M Belgium N.V. 32 3 250 7521	Sumitomo 3M Limited 813 3709 8250	3M Korea Limited 82 2 3771 4114	3M Singapore Pte. Ltd. 65 64508888	3M Taiwan Limited 886 2 2704 9011

Technical Information: The technical information, recommendations and other statements contained in this document are based upon tests or experience that 3M believes are reliable, but the accuracy or completeness of such information is not guaranteed.

Product Use: Many factors beyond 3M's control and uniquely within user's knowledge and control can affect the use and performance of a 3M product in a particular application. Given the variety of factors that can affect the use and performance of a 3M product, user is solely responsible for evaluating the 3M product and determining whether it is fit for a particular purpose and suitable for user's method of application.

Warranty, Limited Remedy, and Disclaimer: Unless an additional warranty is specifically stated on the applicable 3M product packaging or product literature, 3M warrants that each 3M product meets the applicable 3M product specification at the time 3M ships the product. 3M MAKES NO OTHER WARRANTIES OR CONDITIONS, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OR CONDITION OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR ANY IMPLIED WARRANTY OR CONDITION ARISING OUT OF A COURSE OF DEALING, CUSTOM OR USAGE OF TRADE. If the 3M product does not conform to this warranty, then the sole and exclusive remedy is, at 3M's option, replacement of the 3M product or refund of the purchase price.

Limitation of Liability: Except where prohibited by law, 3M will not be liable for any loss or damage arising from the 3M product, whether direct, indirect, special, incidental or consequential, regardless of the legal theory asserted, including warranty, contract, negligence or strict liability.



Electronics Markets Materials Division

3M Center, Building 224-3N-11
St. Paul, MN 55144-1000
www.3M.com/novec1230fluid
1-800-251-8634

Please recycle. Printed in USA.
Issued: 11/13 © 3M 2013.
All rights reserved. 9532HB
60-5002-0070-8

3M and Novec are trademarks of 3M.
Used under license by 3M subsidiaries and affiliates.