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Operating Instructions for Tiger Foam Open Cell Spray Foam

Two-component, low pressure, disposable spray polyurethane foam systems

Instructions for Use

When spraying the dispensing unit for the first time or when starting a new kit, it is recommended to trigger the gun only 1/2 to 3/4 open, until the desired output is achieved. This controllable metering ability is a major advantage of this dispensing unit. It allows the user complete control of the flow rate that best fits the application.

Spraying Foam

1. Wear protective glasses with side shields or goggles, nitrile gloves, and clothing that protect skin from exposure. It is helpful to apply a moisturizing lotion to face prior to spraying, as the lotion will help keep the foam from sticking to any exposed skin the goggles and respirator won't cover. Use only in a well ventilated area with certified respiratory protection or a powered air purifying respirator (PAPR). See MSDS (available inside packaging and at www.tigerfoam.com).
2. For best results, use when material is between 85-95°F (29-35°C). Clean grease, oil, dirt and water off surfaces to be foamed. Take tanks out of the box and shake them before using. To shake, roll tanks on their side and rock back and forth vigorously for 3 minutes each. Tanks can be placed back in box during the application as this will help keep them upright and will be easier to move around during the application. For large kits, thread hose to tank and tighten with supplied 9/16" wrench. In winter months make sure to warm tanks up 1-2 days prior to the application to assure the core temperature of tanks have warmed thoroughly.
3. Open both tank (A & B) valves. Tanks must be upright during use.
4. Attach nozzle to the dispensing unit. Apply a thin layer of petroleum jelly to cover the face of the gun. This thin layer of petroleum jelly helps keep the seating ports and gun face clean. (Detailed instructions for attaching nozzle shown on separate page of this document.)

To Attach Nozzles

- Insert bottom tab of nozzle into bottom slot on gun face
- Attach top latch by pushing towards back of unit until an audible "snap" is heard.

5. When spraying the dispensing unit for the first time and with each new kit, dispense foam by squeezing the trigger only 1/2 to 3/4 open until desired output is achieved. This controllable metering is a major advantage of the dispensing unit, allowing the user complete control of the flow rate that best suits the application.
6. **Once the trigger is squeezed it must be reactivated within 30 seconds or a new nozzle must be installed. Tips need to be changed every 8 minutes of continuous spray time and also if you stop spraying for more than 30 seconds. Failure to do this could result in getting off ratio between the A and B tanks. It can also result in chemical leakage that can ruin the gun and hoses.**
7. **IMPORTANT:** After releasing trigger, activate the trigger safety to prevent accidental discharge.
8. All nozzle tips are easily cleaned and solvent resistant. To reuse nozzles, have a container of acetone ready to drop the dirty tip in at the time of the tip change. The dirty tip must be placed in the acetone prior to its completely curing or the tip will not clean well. **Cleaning nozzle tips more than twice is not recommended.** Gun face can be kept clean by applying a thin layer of petroleum jelly to the face of the gun. This area can be cleaned with a soft cloth to remove any residue that may accumulate.
9. Do not remove hoses from tanks. Do not flush/clean hoses with air, water or solvent. Removing and/or

cleaning hoses may compromise the foam.

IMPORTANT APPLICATION NOTES:

1. Product item numbers are designed to approximate the theoretical yields obtainable from each product. For example, TF1350 refers to 1,350 board feet optimum foam yield, (a board foot is a measurement term equal to 12"x12"x 1"). Actual yields will vary depending on factors such as ambient conditions, application technique, foam density, etc. See Technical Data Sheet for additional theoretical yield information.
2. Various U.S. and foreign patents cover the dispensing system.
3. Suitability of this product for any particular purpose, such as achieving desired sound or insulation properties, performance specifications or application requirements must be determined by the end user, prior to use. Verification that product is properly applied and installed is also the responsibility of the end user.
4. If you have any questions about this product, please contact your Sales Rep.

WARNINGS:

Follow safety precautions and wear protective equipment as recommended.

This equipment includes respirator, safety glasses with side shields or goggles, and impervious gloves, and protective clothing such as a tyvek suit. Consult Material Safety Data Sheet (MSDS) for specific information. Use only with adequate ventilation or certified respiratory equipment. NIOSH approved positive pressure supplied air respirator or a negative pressure half mask with organic vapor cartridge with particle pre-filters are recommended if exposure guidelines may be exceeded. Foam is very sticky and may be irritating to skin and eyes: therefore, wear impervious gloves, protective eyewear and suitable work clothes during use. It is helpful to apply a moisturizing lotion to face prior to spraying, as the lotion will help keep the foam from sticking to your skin. If liquid chemical comes in contact with skin, first wipe thoroughly with dry cloth, then rinse affected area with water. Wash with soap and water afterwards. Apply lotion if desired. If liquid comes in contact with eyes, immediately flush with large volume of clean water for at least 15 minutes and get medical help at once. If liquid chemical is swallowed, drink one to three glasses of water or milk and obtain immediate medical attention.

KEEP OUT OF REACH OF CHILDREN.

Storage and Re-Use

1. Close tank valves.
2. Do not store at temperatures above 120°F (49°C) or below 50°F (10°C). Kits stored below 85°F must be given sufficient time (1-2 days) for the chemical to warm up to 85-95°F (29-35°C).
3. The used nozzle should be left on the dispensing unit during storage in order to help keep the outlet ports of the dispensing unit clean and free from any dust, dirt or chemical that can affect the proper sealing of the nozzle.

SAFETY: Always engage the trigger safety and close all supply valves during storage.

4. All dispensing unit nozzles are easily cleanable and solvent resistant. To clean nozzles, liquid chemical must be dissolved prior to its complete chemical reaction by flushing the nozzle with a suitable solvent such as acetone. Gun face can be kept clean with the use of petroleum jelly on the face or with a soft cloth to remove residue.
5. Do not remove hoses from tanks. Do not flush/clean hoses with air, water or solvent. Removing and/or cleaning hoses may compromise the foam.

The dispensing unit is a disposable unit not designed for prolonged storage or continuous re-use. To help extend the storage life, it is recommended to dispense a minimal amount of foam from unit at least once every three (3) days to ensure optimum flow of chemical through hoses. Use of contents within 30 days of initial use is recommended. Make certain valves are in upright position when opening them and operating the unit.

Re-use of Dispensing Unit After Storage

1. Before disengaging the trigger safety, remove the used nozzle.
2. Check the face of the dispensing unit to make sure the outlet ports are clear and the face of the unit is free from dirt, chemical or other debris. If necessary, use a soft cloth or rag to remove any cured foam or chemical from the face of the dispensing unit. Apply a thin layer of petroleum jelly to cover the face of the gun. This thin layer of petroleum jelly helps keep the seating ports and gun face clean.
3. Follow the Set Up instructions at the top of the Operating Instructions.

All dispensing unit nozzles are easily cleanable and solvent resistant. To clean nozzles, liquid chemical must be dissolved prior to its complete chemical reaction by flushing the nozzle with a suitable solvent such as acetone. Gun face can be kept clean with the use of petroleum jelly on the face or with a soft cloth to remove residue.

Disposal Procedures

1. DO NOT INCINERATE TANKS.
2. After tanks are empty, the hose must be removed and the tanks must be vented (depressurized).

CAUTION: Tanks will still be under pressure. Turn valves to the off position before removing the hoses. Safety glasses with side shields or goggles, nitrile gloves, clothing that protects against dermal exposure, and a certified respirator must be worn during this procedure. With tank inverted, slowly open tank valve, point tank away from face and allow pressure to completely vent. **CAUTION:** Empty tank could contain potential vapor toxicity hazard. Dispose Cylinders in a well ventilated area with certified respiratory protection.

3. DISPOSE OF EMPTY CYLINDERS ACCORDING TO APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS. CHECK WITH YOUR LOCAL WASTE DISPOSAL SERVICE FOR GUIDANCE.

Troubleshooting

- **Poor chemical flow-** *(Note: when injecting foam into an enclosed cavity, it is important to check frequently that chemical is flowing properly and to replace any nozzle that has become clogged.)*

This problem could be that tank valves are not fully open or tanks opened in the wrong position, allowing only propellant gas to escape. Tanks are too cold.

- **Slow cure** - This problem could be that the unit is out of shelf life, chemical or substrate too cold or the kit is dispensing off ratio.

- **Dark crunchy foam** - This is a sign that the foam has become **"A" rich**.

The system is off-ratio causing more of the "A" chemical to be sprayed than the "B" chemical.

- **Foam shrinkage within 24 hours** - This is a sign that the foam was sprayed off-ratio and is **"B" rich**.

- **White spongy foam** - This is a sign that the foam has become **"B" rich**.

The system is off-ratio causing more of the "B" chemical to be sprayed than the "A" chemical. Foam that visibly shrinks within 24 hours after application may be an indication of "B" rich foam.

- **Sputtering from nozzle** - This is a sign of empty tanks, clogged nozzle, or a blockage in the system.

- **Lack of expansion in sprayed foam** - This problem could be associated with tank temperatures, clogged nozzles or spraying technique.

- **Foam leaking from hose connections** – Hoses not tightened enough.

Solution: STOP SPRAYING and follow instructions below

1. Remove nozzle and spray chemical into a plastic garbage bag. Check to see that both chemicals are being dispensed from the gun in approximately equal streams.
2. Make sure all valves from the tank to the dispensing unit are fully open.

3. For optimum results, the chemical temperature must be between 85- 95°F (29-35°C). During colder months tanks up 1-2 days prior to the application to make sure the core temperature of the tanks have warmed to 85- 95°F (29-35°C), especially if the tanks have recently been transported or stored in an unheated environment.
4. Replace nozzle. If the nozzle has become clogged, the foam may become off-ratio.
5. Make sure tanks are not empty and all valves are fully open. Shake tanks back and forth to determine that they contain chemical.
6. When spraying foam, allow a minimum of 1 minute before applying more foam over freshly sprayed foam. Spray in layers of 1-2" thick (2.5-5.1 cm.) with each application. Trying to apply more than 2"(5.1 cm) in a single spray will pack the foam and may result in lower expansion and lower yields.
7. Foam may be outdated and unusable. Check the expiration date.

LIMITED WARRANTY:

The Manufacturer warrants only that the product shall meet its specifications: this warranty is in lieu of all other written or unwritten, expressed or implied warranties and The Manufacturer expressly disclaims any warranty of merchantability, or fitness for a particular purpose. The buyer assumes all risks whatsoever as to the use of the material. Buyer's exclusive remedy as to any breach of warranty, negligence or other claim shall be limited to the replacement of the material. Failure to strictly adhere to any recommended procedures shall release the Manufacturer of all liability with respect to the materials of the use thereof. User of this product must determine suitability for any particular purpose, including, but not limited to, structural requirements, performance specifications and application requirements prior to installation and after product has been properly applied.

NOTE: Physical properties shown are typical and are to serve only as a guide for engineering design. Results are obtained from specimens under ideal conditions and may vary upon use, temperature and ambient conditions. Right to change physical properties as a result of technical progress is reserved. This information supersedes all previously published data. Yields shown are optimum and will vary slightly depending on ambient condition and particular application. Read all product directions and safety information before use. This product is organic, therefore combustible. Consult local building codes for specific requirements regarding the use of cellular plastics or urethane foam in construction.

Temperatures and Storage

Chemical temperature is very important, store kits above 85°F (29°C) prior to use. Cold chemical may lead to off-ratio flow. Optimum chemical temperature is 85- 95°F (29-35°C).

A-component chemical may eventually harden and clog the hose if stored for too long. Gun is disposable and is not intended for continuous re-use. For best results, dispense liquid from hose at least once every 3 days. Use contents within 30 days of initial use.

Tiger Foam™ Spray Foam products are composed of a diisocyanate, hydrofluorocarbon blowing agent and polyol. Consult the product's MSDS (available inside packaging and at www.tigerfoam.com) for specific information. The urethane foam produced from these ingredients will support combustion and may present a fire hazard if exposed to a fire or excessive heat about 240°F (116°C). Wear protective glasses with side shields or goggles, nitrile gloves, and clothing that protects against dermal exposure. Use only in a well ventilated area with certified respiratory protection or a powered air purifying respirator (PAPR). See MSDS (available inside packaging and at www.fomo.com) for specific information.

Component Dispensing Unit

U.S. Patent #6,345,776

Other Patents Pending