DUPONT

Froth-Pak™

DuPont™ Froth-Pak™ Foam Systems

180 QR/SR, 600 QR/SR and 1900 QR/SR Kits

Operating Manual

EMEA August 2022

Please carefully read this manual, the user manual that comes with the product and the Safety Data Sheet (SDS) before use.
These materials contain important information on applicable safety regulations and the provisions on the protection of health.
Safety data sheets are revised regularly – please request and note the latest version before using/processing or obtain directly at:
www.froth-pak.dupont.com (SDS Finder)

SAFETY EQUIPMENT MUST BE WORN WHILE USING THIS PRODUCT. DO NOT USE THIS PRODUCT IF YOU HAVE BEEN SENSITIZED TO ISOCYANATES.

Any user of these spray foam products must complete training and certification prior to use. The trainings are available at
www.dupont.co.uk/building/reach-trainings.html

For additional information please contact DuPont at **+800 3876 6838.**

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Section 1

Froth-Pak™ Spray Polyurethane Foam Systems kits are a polyurethane foam dispensing system for users who are performing small air sealing or insulation jobs that do not require the capacity of larger, bulky non-portable systems. The system consists of "A" and "B" chemical tanks, chemical dispensing hoses, and a Gun with Hose Assembly Kit. The system requires no other propellent or pump as the tanks are pressurized at the factory to max 17 bar (250 psi).

Froth-Pak™ kits are designed for ease-of-use.
The following instructions should be followed strictly to ensure maximum equipment performance and efficiency.

For Professional Use Only
Froth-Pak™ Foam kits are designed for professional use only. Professional users in the European Union must have completed the safe use of diisocyanates training, before the 24th of August 2023, available here:
www.dupont.co.uk/building/reach-trainings.html

Summary of Safe Use Instructions
Application guidelines as provided by DuPont Performance Building Solutions should be followed exactly in order to ensure compliance with building codes for user and worker safety. Read all information bulletins, Safety Data Sheets (SDS) and Technical Data Sheets.

For more information visit:
www.dupont.co.uk/products/froth-pak-foam-systems.html

System Information

DuPont™ Froth-Pak™ Foam Systems is a new two-component polyurethane spray foam product, which boasts a global warming potential (GWP) reduction of 99 % compared to the legacy Froth-Pak™ product and does not contain ozone-depleting chemicals or HFCs, while maintaining performance. It comes in two separate portable and disposable pressurized cylinders requiring no external power source.
It allows a fast and easy production of high-quality PU-foam for professional use in all different applications. Once fully cured, Froth-Pak™ Foam Systems is thermally stable in the temperature range of -150 °C to +100 °C. This product can be used in cryogenic applications. It is available in self-contained, portable kits with a convenient carrying handle for smaller jobs or reusable, refillable kits for larger jobs.

DuPont™ Froth-Pak™ Foam Systems 180 QR/ SR Kits

Foam System Description (all products have 15-month shelf life)	Thermal Conductivity (W/m.K)	Density kg/m³	Yield Liter	Kit Contents	Shipping Information
DuPont™ Froth-Pak™ 180 QR	<= 0,022	28	400	1 Iso (A) cylinder 1 Polyol (B) cylinder	11.8 kg Net Weight/kit
DuPont™ Froth-Pak™ 180 SR	<= 0,022	34	400	1 Iso (A) cylinder 1 Polyol (B) cylinder	11.8 kg Net Weight/kit

DuPont™ Froth-Pak™ Foam Systems - 600 QR/ SR / Iso

Foam System Description (all products have 15-month shelf life)	Thermal Conductivity (W/m.K)	Density kg/m³	Yield Liter	Kit Contents	Shipping Information
A kit of Froth Pak 600 consists of 1 cylinder ISO and 1 cylinder Polyol					
DuPont™ Froth-Pak™ 600 ISO				1 Iso (A) cylinder	20,5kg Net Weight/ cylinder 1 cylinder/box 24 boxes/pallet
DuPont™ Froth-Pak™ 600 QR Polyol	<= 0,022	28	1300	1 Polyol (B) cylinder	19,9kg Net Weight/ cylinder 1 cylinder/box 24 boxes/pallet
DuPont™ Froth-Pak™ 600 SR Polyol	<= 0,022	34	1300	1 Polyol (B) cylinder	19,9kg Net Weight/ cylinder 1 cylinder/box 24 boxes/pallet

DuPont™ Froth-Pak™ Foam Systems - 1900 QR/SR/Iso*

Foam System Description (all products have 15-month shelf life)	Thermal Conductivity (W/m.K)	Density kg/m³	Yield Liter	Kit Contents	Shipping Information
A kit of Froth Pak 1900 consists of 1 cylinder ISO and 1 cylinder Polyol					
DuPont™ Froth-Pak™ 1900 ISO				1 Iso (A) cylinder	62, 5kg Net Weight/ cylinder 6 cylinders/pallet
DuPont™ Froth-Pak™ 1900 QR Polyol	<= 0,022	28	4000	1 Polyol (B) cylinder	59,4 kg Net Weight/ cylinder 6 cylinders/pallet
DuPont™ Froth-Pak™ 1900 SR Polyol	<= 0,022	34	4000	1 Polyol (B) cylinder	59,4 kg Net Weight/ cylinder 6 cylinders/pallet

*The product requires extra nitrogen supply.

Section 1

Spray Polyurethane Foam Systems

PRECAUTIONS

DO NOT breathe vapor or spray. Proper Personal Protective Equipment and ventilation are required. See product Safety Data Sheet (SDS) and Section 2 of this manual for further information. Follow all precautions for safe product use.

DO NOT expose container to temperatures above +50 °C (120 °F).

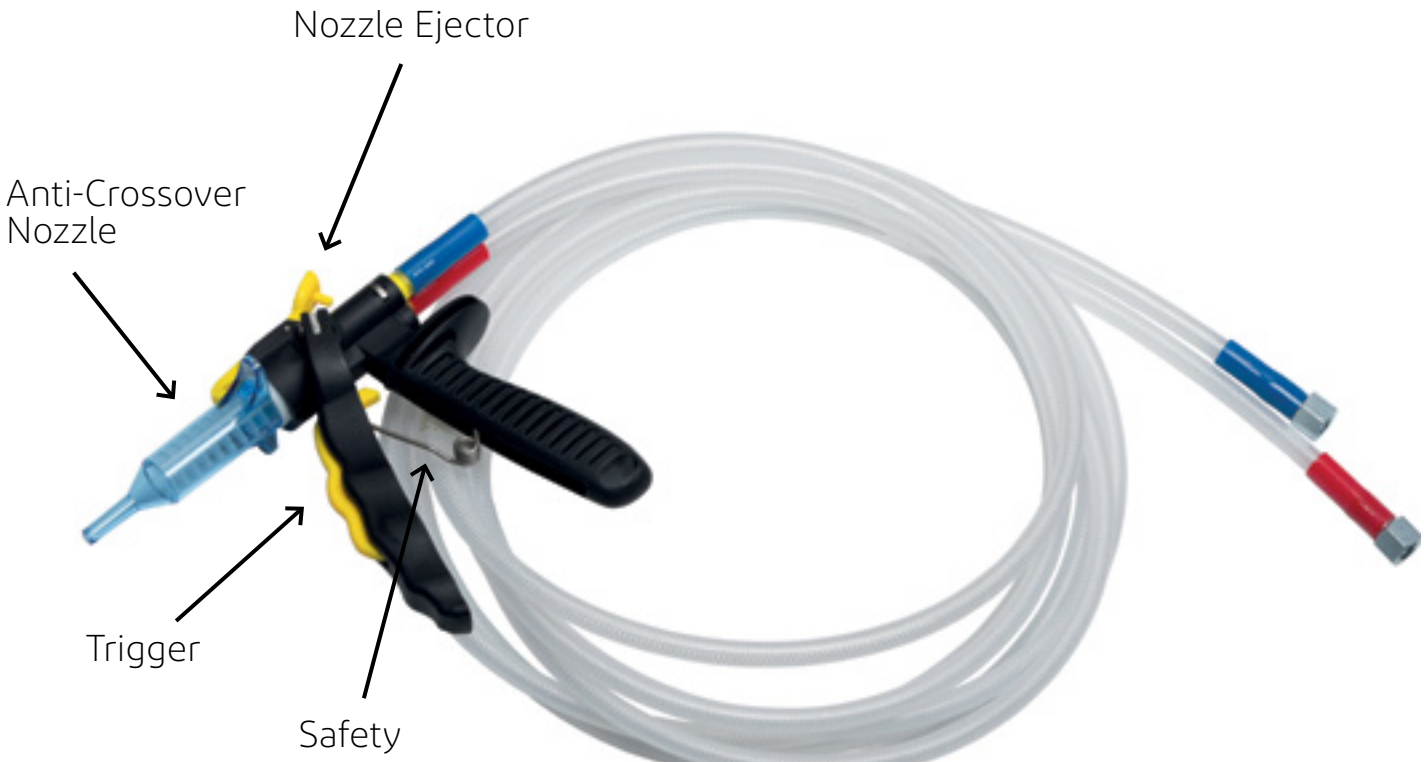
DO NOT incinerate, cut, puncture, or weld on or near container.

DO NOT expose container to sparks or flames.

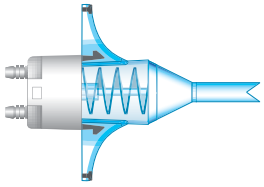
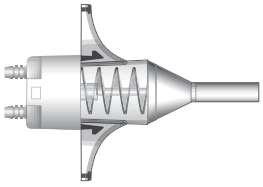
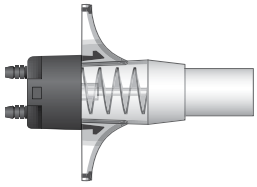
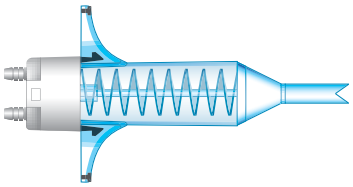
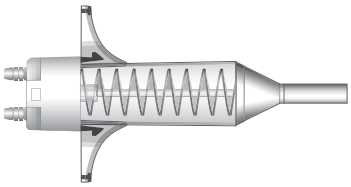
DO NOT use if you have been sensitized to isocyanates.

READ ALL DIRECTIONS BEFORE USING

Insta-Flo™ Gun Hose Assembly



Anti-Crossover Nozzles

Fan	Cone	Pour
The fan type nozzle provides a fine fan spray pattern resulting in a smooth foam surface (paint spray finish)	The cone type nozzle provides a round spray pattern for multiple applications and surfaces	The pour type nozzle is designed to fill large cavities
		
Standard fan nozzle	Standard cone nozzle	Standard pour nozzle
		
New type fan nozzle	New type cone nozzle	

Nozzle use guidance:

- Quick-rise wall insulation: use of the fan nozzle (gmid 259216) or new cone nozzle (gmid 12030877) is recommended for best spray pattern
- Quick-rise vertical on metal: always apply a flash layer with any fan nozzle first

Anti-Crossover Nozzles (25 Pack)

Part#	Output Kg/Min	Nozzle Type	Front/Back – Nozzle Color
259216	Medium 2 kg/Min	Fan	Blue/White
259219	Medium 2 kg/Min	Cone	Transparent/White
259220	High 4-5 kg/Min	Pour	Transparent/Black

New Anti-Crossover Nozzles (25 Pack)

Part#	Output Kg/Min	Nozzle Type	Front/Back – Nozzle Color
12030878	Medium 2 kg/Min	Fan	Blue/White
12030877	Medium 2 kg/Min	Cone	Transparent/White (Included in Froth-Pak™ kits)
259220	High 4-5 kg/Min	Pour	Transparent/Black

Section 2

Safety Precautions

WARNING:
The Froth-Pak™ Foam Systems cylinders contain isocyanate, blowing agent and polyols under pressure. Please read carefully the user manual that comes with the product (inside the product box) and the Safety Data Sheets (SDSs) before use. The safety precautions and personal protective equipment indicated below are designed to protect the user and allow for the safe use and handling of the product. These documents contain important information on applicable safety regulations and the provisions on the protection of health. Safety Data Sheets are revised regularly – please request and note the latest version before using/processing or obtain directly at:
www.froth-pak.dupont.com (SDS Finder).

Please take note of the following training and certification requirements for the safe use of this product by professional and industrial users in the European Union.

As from 24 August 2023, adequate training is required before industrial or professional use.
For more information, please visit:
www.dupont.co.uk/building/reach-trainings.html

The information on the requirement and accessing the training and certification can be found on Section 2.2 of the SDS, on the product label and packaging of the isocyanate component of the product.

2.1 Safety Clothing (Personal Protective Equipment or PPE)

- Personal protective equipment (PPE) used during the handling of Froth-Pak™ Foam Systems must at a minimum include:
  - Protective clothing or impermeable coveralls, such as a Tyvek® coverall suit, including long sleeves (no skin should be exposed).
  - Chemical-resistant gloves that are coated with nitrile, butyl rubber, neoprene or PVC.
  - Goggles or safety glasses, unless using a full-face respirator.
  - Proper respiratory protection, see section 2.2.

- PPE should be worn by:
  - Applicator.
  - Anyone assisting applicator.
  - Other workers in the room within 7 m of the applicator.
  - Anyone entering the spray area less than one hour post spraying with proper ventilation.
    - If PPE is contaminated during application, properly discard and replace immediately.
    - Do not consume or store food or tobacco in the work area. Make sure to wash your hands and face before eating or smoking after application.

2.2 Respiratory Protection

2.2.1 Personal Respiratory Equipment

DO NOT breathe vapors or spray. Workers must be respirator fit tested per national requirements.

Employers must have a documented respiratory and PPE plan per national requirements including considerations for frequency of fit testing and health exams. Depending on the area of spray, the amount of foam being sprayed, the amount of ventilation and the type of spray nozzle used, respiratory protection equipment may differ in order to offer optimum protection to avoid exceeding established exposure limits of the chemicals. Proper respiratory protection options include:

- The following CE approved air-purifying respirator: Organic vapor cartridge with a highly toxic particulate pre-filter, type AP3 (meeting standard EN 14387). When atmospheric levels may exceed the exposure guideline, use an approved air-purifying respirator equipped with an organic vapor sorbent and a particle filter.
- For situations where the atmospheric levels may exceed the level for which an air-purifying respirator is effective at maintaining occupational exposure limits (OELs) below ACSH, OSHA, or other national applicable limits, use a positive-pressure, air-supplying respirator (airline or self-contained breathing apparatus) or supplied air.
- For emergency response or for situations where the atmospheric level is unknown, use an approved positive-pressure self-contained breathing apparatus or positive-pressure air line with auxiliary self-contained air supply.
- Change out respirator cartridges according to your employer's change-out schedule (typically 8 hours or end of shift).
- The spray foam applicator and anyone within 7 m of the applicator, must use approved respiratory protection.
- If there is ever a doubt as to the potential limits for worker exposure, DuPont always recommends using the highest level of protection.

2.2.2 Containment of spray zone

Use barrier tape and warning signs to mark the working perimeter for respiratory hazards until at least one hour after spraying has ended. Isolate the spray area by shutting down the HVAC system and sealing off any air intakes. If spraying outdoors, ensure the barrier keeps others at least 7 m away from the spray area in all directions and use additional barriers as needed to protect downwind areas.

2.2.3 Ventilation

- During application a minimum of 10 Air Changes per Hour (ACH) is required. Cross ventilation is recommended with negative pressure in the spray area and exhaust to a secured empty area. A commercial ventilation unit is recommended.
- Ensure the exhaust from the spray area is sent to a secured empty area with considerations for warning signs, barrier for 7 m of non-entry, wind, HVAC systems, and other factors.
- Continue to ventilate area for at least 1 hour after the job is completed at no less than 10 ACH.
- Re-entry into an application site occurring less than 1 hour post spray with proper ventilation requires the use of an approved air purifying respirator equipped with an organic vapor sorbent and a particle filter.
- Ensure ventilation hose output is in a safe and secure location that will not be accessible to individuals without proper PPE in a 7m radius and is not near an air intake for a structure.

2.3 Isocyanate Sensitization

Inhalation of vapors or mist at concentrations in excess of permissible limits may result in an allergic respiration response and the development of sensitization. Skin contact with diisocyanates may play a role in respiratory sensitization. Anyone who has been sensitized in the past should not operate nor be in close proximity to the operation of these systems as isocyanate concentrations below exposure guidelines may cause allergic respiratory reactions in individuals who are already sensitized. Individuals who are sensitized cannot become un-sensitized and should not handle Froth-Pak™ Foam Systems. Asthma-like symptoms may include coughing, difficulty breathing, and a feeling of tightness in the chest. In rare instances, breathing difficulties may be life-threatening.

2.4 First Aid

It is important to know the proper steps in first aid if there is any type of contact with two-component, low-pressure foams. In severe cases contact a physician and/or transport them to a medical facility immediately.

2.4.1 Skin Contact

Avoid ALL contact with skin. May cause irritation or sensitization. If skin contact occurs, remove contaminated clothing; carefully remove uncured material without spreading; wash skin with soap and water. If irritation occurs or persists, seek medical attention.
Wash clothing before reuse. Discard items which cannot be decontaminated, including leather articles such as shoes, belts and watchbands. Suitable emergency safety shower facility should be available in work area.

2.4.2 Removal of Cured Foam on Skin

Froth-Pak™ foam will adhere to most surfaces and skin. Avoid **ALL** skin contact. Wear gloves and protective clothing. Cured foam is difficult to remove. Cured foam must be mechanically removed or allowed to wear off in time.

2.4.3 Eye Contact

Avoid **ALL** contact with eyes. Causes irritation. If contact with eyes occurs, remove contact lenses, if present, and flush with clean, low pressure water for 15 minutes while holding eyelids open. Seek medical attention preferably from an ophthalmologist. Suitable emergency eye wash facility should be immediately available.

2.4.4 Ingestion

If swallowed, seek medical attention immediately.
DO NOT induce vomiting.

2.4.5 Inhalation

Remove person to fresh air. If not breathing, give artificial respiration. If by mouth to mouth use rescuer protection (pocket mask, etc). If breathing is difficult, oxygen should be administered by a qualified professional. Call a physician or transport to a medical facility.

2.5 Overfilling Restricted Spaces

Avoid overfilling restricted spaces. The reaction of these chemicals causes expansion and may exert enough force to cause an uncontrolled stream of foam, spraying the work area and possibly the operator.

2.6 Chemical Information

For more specific information about the chemical components “A” and “B”, refer to the appropriate SDS. These products are FOR PROFESSIONAL USE ONLY, therefore they should not be sold or used by Consumers. KEEP OUT OF REACH OF CHILDREN.

2.7 Chemical Spills

Consult SDS section 6 for Accidental Release Measures.

2.7.1 “A” Chemical, ISO

If “A” liquid spills from the tank, hose, or Insta-Flo™ Gun, provide proper ventilation, wear all PPE and isolate the spill area. Keep unnecessary and unprotected personnel from entering the area. Contain spilled material if possible and soak up the spill with an oil absorbent material (dirt, vermiculite, sawdust, sand, clay, etc.). Neutralize the spillage area with a solution of 90 % water, 2 % dishwashing detergent and 8 % ammonia. The amount of this solution should be in excess of the volume of the spill. Allow the mixture to react for at least 10 minutes. Collect in an open top waste container and treat with additional ammonia solution. Remove the container to a safe and secure location that will not be accessible to individuals without proper PPE, loosely cover, and allow it to stand at least 24 hours. This product when being disposed of in its unused and uncontaminated state should be treated as a hazardous waste according to EC Directive 2008/98/EC. Any disposal practices must be in compliance with all national and provincial laws and any municipal or local by-laws governing hazardous waste. For used, contaminated and residual materials additional evaluations may be required. Do not dump into any sewers, on the ground, or into any body of water. Incineration under approved, controlled

conditions using incinerators suitable or designed for the disposal of hazardous chemical wastes, is the preferred method for disposal. Small quantities of waste may be pretreated for example with polyol, to neutralise prior to disposal. Empty drums should be decontaminated and either punctured and scrapped or given to an approved drum reconditioner.

2.7.2 "B" Chemical, POLYOL

If the "B" chemical spills from the tank, hose, or Insta-Flo™ Gun, wear all PPE and isolate the spill area. Keep unnecessary and unprotected personnel from entering the area. Soak up the residue from the surface with soap and water. This product when being disposed of in its unused and uncontaminated state should be treated as a hazardous waste according to EC Directive 2008/98/EC. Any disposal practices must be in compliance with all national and provincial laws and any municipal or local by-laws governing hazardous waste. For used, contaminated and residual materials additional evaluations may be required. Do not dump into any sewers, on the ground, or into any body of water. Incineration under approved, controlled conditions using incinerators suitable or designed for the disposal of hazardous chemical wastes, is the preferred method for disposal. Small quantities of waste may be pretreated for example with polyol, to neutralise prior to disposal. Empty drums should be decontaminated and either punctured and scrapped or given to an approved drum reconditioner.

2.8 Cautions

2.8.1 Storage Temperature

Recommended storage temperature:
+5 – +25 °C (41 – 77 °F).
Storage below +5 °C (41 °F) is not recommended.
Do not store at temperatures above +50 °C (120 °F).

2.8.2 Building Codes

In many areas, building codes may restrict the use of cellular plastics or polyurethane foam in exposed, interior finishing material applications. Under certain application code, the use of these materials may be prohibited. The foam produced by this product is a plastic and may constitute a fire hazard if improperly applied.
Consult local building codes.

2.8.3 Surface Temperature Restrictions

Polyurethane foam should not be used in direct contact with chimneys, heat vents, steam pipes, or other surface areas that exceed +100 °C (212 °F). The foam should not be left exposed or inadequately protected for both interior and exterior finishing materials. It is strongly recommended in all applications that the foam be protected by approved facings and coatings.

2.8.4 Open Flame / Spark Source

Do not smoke or operate the system in close proximity to an open flame or spark source. Ensure pilot lights are off. Welding on or near cured polyurethane foam requires special precautions. Consult DuPont for instructions.

2.8.5 Excessive Foam Dispensing

Do not apply excessive thicknesses at one time as this may result in spontaneous combustion. For thickness greater than 5cm of cured foam, dispense foam in multiple layers, allowing the heat from foaming to dissipate between sprayings.

2.8.6 Isocyanate Contamination

Isocyanate and water do not mix, and this can happen even from the water in the air. The material will solidify and then the gun and hose will be unusable. The best thing to do is to take care of the guns and hoses by using the entire kit within 30 days of opening.
WARNING: Water reacts aggressively with isocyanate ("A" chemical/ISO). Reactions within a confined space such as within a hose may present a safety concern. Even small amounts of water vapor may cause a blockage or an adverse reaction. Water carried within the polyol ("B" chemical/POLY) hose to the point where blending with isocyanate occurs must be avoided.

2.8.7 Confined Space

When preparing a site for spray foam, all considerations for potential confined spaces must be taken and all OSHA requirements must be met if applicable.

2.9 Training

Froth-Pak™ Foam Systems kits are designed for professional use only. Based on the European Commission Regulation (EU) 2020/1149, diisocyanates as a substance or in mixtures shall not be placed on the market for industrial and professional use(s) after 24 February 2022, unless:

- The concentration of diisocyanates is less than 0,1% by weight;
- The following statement is placed on Section 2.2 of the SDS and on product packaging, in a visible way distinct from the rest of the label info:
  "As from 24 August 2023, adequate training is required before industrial or professional use."
- Prior to use of the Froth-Pak™ Foam Systems as from 24 August 2023, professional and industrial users within the European Union must complete the training(s) and get the certification on the Safe Use of Diisocyanates.

The training(s) and certification are available via:
www.dupont.co.uk/building/reach-trainings.html

For further information:
Visit **www.froth-pak.dupont.com** or contact a local DuPont Sales representative for more specific instructions.

Section 3

Operating Instructions

How to prepare and use your Froth-Pak™ Kit.

Froth-Pak™ Kit contents

WARNING
Before using Froth-Pak™ kits please read and follow **ALL** instructions in this manual and the SDS.

Froth-Pak™ Gun Hose Assembly Kit:
1 Insta-Flo™ Dispenser and Hose Assembly Assortment
Anti-Crossover Nozzles
1 Petroleum jelly packet
1 Wrench

Froth-Pak™ Foam Systems 180 QR/ SR Kit
2 tanks of chemical (1 ISO, 1 POLYOL) – boxed
Operating Manual

Froth-Pak™ Foam Systems 600QR/SR:
1 chemical tank A (ISO) – boxed
Or/and
1 chemical tank B (POLYOL) – boxed

Froth-Pak™ Foam Systems 1900 QR/SR:
1 chemical tank A (ISO)
Or /and
1 chemical tank B (POLYOL)

Getting the kit ready

1. Using the wrench from the assembly kit for Insta-Flo™ dispenser/ hose, tighten the hose assemblies for both "A" and "B" valves until both are tight. (See Figure 1). The wrench is intentionally designed to warp or bend if excessive pressure is applied.
2. Apply a coating of petroleum jelly to the inside face of the Insta-Flo™ dispenser. This makes cleaning of the dispenser face much easier and extends the effective life of the dispenser.
3. Turn the tank valves on fully (See Figure 2), noting the initial movement of chemical through the clear hoses as a confirmation of flow.
4. Purge the system into a waste container by activating the trigger of the Insta-Flo™ dispenser (See Figure 3). **Chemical streams must be of equal volume to assure good quality foam.** When streams are equal, release the trigger, clean the chemical from the dispenser face with a clean rag, and reapply petroleum jelly.
5. Select and insert firmly an Anti-Crossover Nozzle into the Insta-Flo™ dispenser. Be sure the dispenser clips the nozzle firmly in place. (See Figure 4)

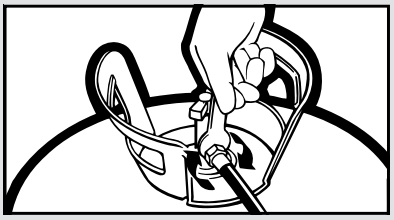


Figure 1

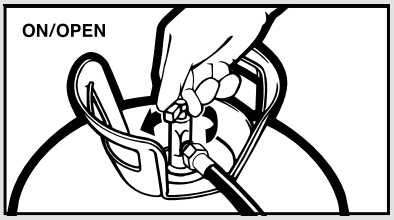


Figure 2

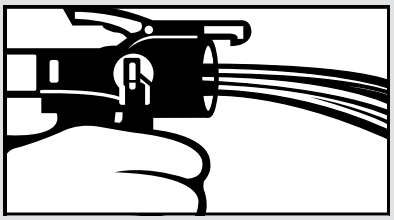


Figure 3

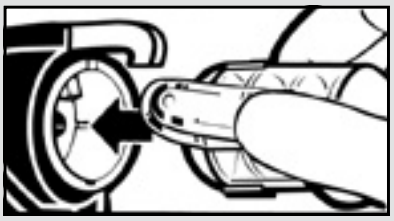


Figure 4

Recommended Temperatures
For best results, the tank contents should be at +22 °C (72 °F) or warmer.
Froth-Pak™ Foam can be applied effectively in cool air temperatures or on cool work surfaces (above freezing and less than 75 % relative humidity) provided the kit contents are at least +24 °C (75 °F).

Cold weather notice
The proper liquid component temperature in spray foam ensures a balanced chemical ratio, consistent tank pressure and an optimal foam yield.

To achieve the optimal liquid component temperature before spraying foam, store chemical indoors at a temperature between +25 – +30 °C (75 – 85 °F) for a couple of hours prior to spraying. Otherwise, the foam performance could be compromised and ultimately could lead to a loss in yield. See Section 7.1, Temperature, and Section 11, Tank Heating.

DuPont also recommends that you roll each tank back and forth a few times before opening the valves for the first use to ensure optimum foaming of Froth-Pak™ Foam Kits.

If after proper conditioning the kit is not performing properly, please stop spraying and access the trouble-shooting tips in this brochure or contact the Customer Information Group at +800 3876 6838.

3.1 System Purging and Testing

1 **DO NOT** breathe vapor or spray. Proper PPE and ventilation are required. See product SDS and Section 2 of this manual for further information. Follow all precautions for product.
2. Dispense liquid materials in an appropriate container for about 10 seconds. This is to verify proper chemical flow.
3. Clean any liquid material from the Insta-Flo™ Gun face using a rag.
4. Apply a coating of petroleum jelly to the inside face of the Insta-Flo™ dispenser. This makes cleaning of the dispenser face much easier and extends the effective life of the dispenser.
5. Insert an unused nozzle with the key slot down. Pushing firmly until the nozzle ejector is seated over the back rim of the nozzle.
6. Dispense foam to verify proper chemical mixing. If improper mixing or poor foam quality, refer to the Troubleshooting section, Section 7 of this manual.

3.2 Nozzle Replacement

1. The life of a nozzle depends on elapsed paused spraying time and chemical temperature. Replace a previously used nozzle if the elapsed paused spraying time is exceeded.
2. To replace the used nozzle, push down the nozzle ejector. The used nozzle should eject.

3.2.1 Using the Kit

Replace nozzle when nozzle has not been used for more than 30 seconds. Nozzle is removed by firmly depressing the yellow ejector located at the top of the Insta-Flo™ Dispenser. Before applying foam, make a small test shot into waste container to verify foam quality.

Insert an unused nozzle with the key slot down. Push in firmly until the nozzle ejector is seated over the back rim of the nozzle. The kit is ready to operate.

Section 4

DO NOT breathe vapor or spray. Proper PPE and ventilation are required. See product SDS and Section 2 of this manual for further information. Follow all precautions for product.

4.1 Application

READ ALL DIRECTIONS BEFORE USING

1. Chose the nozzle with the pattern and flow rate appropriate for the job. Attach the nozzle.
2. Practice on scrap material or plastic sheet to get the feel of spraying and to ensure you are making good foam.
3. Hold the Insta Flo™ Dispenser about 15 cm - 45 cm (6"- 18") away from the area you intend to spray. Apply foam by squeezing trigger. Note yellow safety on the trigger must be depressed first, unlocking trigger. Move the Insta-Flo™ Dispenser with a steady back and forth motion when dispensing foam. Hold the gun a consistent distance from the work and perpendicular to the work. Move in a steady side to side stroke. Avoid swinging the gun, it will result in variable thicknesses of foam. The speed of your movement and the distance from the work will determine the thickness of the foam.
4. **Always fully engage the trigger of the gun. Partial engagement can result in off ratio foam.**
5. It is important to note that two-component foam products will release heat while the liquid froth cures into the final solid. They should be applied in layers of 50 mm or less to allow the foam's heat to dissipate between sprayings.
6. Let the foam cure (30 – 60 seconds). Look for an even tan color foam. Watch to see that it rises 3 or 4 times the original thickness. Make sure the foam has cured and is firm. Foam will expand and will be tack free within 60 seconds and is fully cured in five minutes. It is recommended that foam be applied in layers of 50mm or less in any single application layer. Note: If the foam is to be injected into a hidden cavity, a test shot is recommended prior to each injection.
7. If the foam looks unusual, verify that the tanks are at least +22 °C (72 °F). Then remove the nozzle and purge material into a waste container for 15 seconds. Clean the face of the gun, insert a new nozzle and perform a test spray again.
8. If problems persist call your DuPont representative or DuPont Technical service.
9. While spraying, always watch for signs of unusual looking foam. Troubleshoot as outlined above and in Section 7.
10. Bubbles may appear in the translucent hoses near the gun. This is an indication that the tanks are nearing empty, however it does not compromise the foam quality. Continue to dispense foam until one of the hoses becomes clear of material. At this point the kit is empty. Stop spraying and close the tanks.

WARNING: CURED FOAM IS COMBUSTIBLE AND WILL BURN IF EXPOSED TO OPEN FLAME OR SPARKS FROM HIGH ENERGY SOURCES. These products should not be sprayed where the foam may come into contact with hot surfaces, such as heaters, furnaces, fireplaces, or recessed lighting fixtures. The foam should NOT be exposed to temperatures over +116 °C (240 °F).

4.2 Insta Flo™ Gun Operation

The Insta-Flo™ Gun provides greater flow control and minimizes waste when used properly. The following operating instructions ensure maximum efficiency and performance of the Insta-Flo™ Gun.

1. **DO NOT** breathe vapor or spray. Proper PPE and ventilation are required. See product SDS and Section 2 of this manual for further information. Follow all precautions for product.
2. To insert an unused nozzle, verify that the key slot on the nozzle is in the down position. Push in firmly until the nozzle ejector is seated over the back rim of the nozzle.
3. If the spray flow rate needs to be higher or lower, use a different colored back cap nozzle (refer to the nozzle chart on page 8. DO NOT partially open the Insta-Flo™ Gun trigger to meter the flow as this will change the ratio of the foam and affect the foam quality.
4. The life of a nozzle depends on elapsed paused spraying time and chemical temperature. Replace a previously used nozzle if the elapsed paused spraying time is exceeded using the chart on the previous page as a guide.
5. When spraying is completed, remove the used nozzle by pushing down on the nozzle ejector.
6. Apply petroleum jelly to the face of the Insta-Flo™ Gun avoiding putting petroleum jelly into the exit holes.
7. Reinsert the used nozzle. This provides an airtight seal during storage.
8. Close both cylinder valves for storage. Refer to Insta-Flo™ Gun drawing, page 6

4.3 Cold weather spray guidance (below +18 °C/65 °F at 25mm thickness, and +12 °C/55 °F at 50mm thickness)

It is recommended to spray on surfaces and in air temperatures +18 °C (65 °F) and above. It is not recommended to spray in cold temperatures or on cold substrates below +12 °C (55 °F) as foam shrinkage may occur. However, if it is necessary, please follow these instructions to minimize foam shrinkage.

Spray a very thin "flash coat" of foam using the fan nozzle onto all surfaces to which the finished foam will contact. Fan nozzles help to disperse the spray pattern and allow to more easily spray a very thin layer, preferably 12 mm thickness or less. Allow the flash coat to become tack free.

Spray the finished foam to desired pattern and thickness. A thicker spray (up to 50mm) will help minimize shrinkage. Thicker foam helps hold in the heat generated during the reaction and allows for a fuller cure.

Section 5

Storage

1. Store in a dry area.
2. Store between +5 – +30 °C (40 – 85 °F).
3. **DO NOT** store at temperatures above +50 °C (120 °F) or below +5 °C (40 °F). Keep out of direct sunlight.
4. **DO NOT** store near steam or hot water pipes.
5. **DO NOT** store near chimneys or heat vents.
6. To store a partially used kit (use kit within 30 days of opening): Shut both cylinder valves completely. Leave hoses pressurized to keep moisture from air out of hoses. Clean end of gun and reapply petroleum jelly to face of gun. Re-insert a **used** nozzle in the gun to keep air and moisture out of the gun/hoses.
7. If a partially used system remains inactive for a period of time, the system should be purged every two weeks. This will prevent crystallization of the chemical in the hoses.
8. Use by date on carton lid.

Section 6

DO NOT breathe vapor or spray. Proper Personal Protective Equipment and ventilation are required. See product SDS and Section 2 of this manual for further information. Follow all precautions for product.

Re-Start

1. Follow all requirements for a new kit including wearing all PPE, and ensuring proper ventilation and isolation of spray area are intact.
2. Open the valves on the chemical tanks for the A and B sides.
3. Remove the cured nozzle that you left attached to the gun.
4. Spray into a waste container. Ensure that you flush until you have good flow from both the A and B side hoses, two strong frothing streams. If you get liquid only, keep flushing until get frothing on both channels!
5. Clean the face of the gun. Attach a new nozzle.
6. Spray a test sample to ensure good quality foam.
7. Resume spraying.

Section 7

Troubleshooting.
Maintenance and after-use instructions.

The Froth-Pak™ Kit is virtually maintenance-free and many problems can be corrected through simple troubleshooting techniques. When troubleshooting, confirm that the system is pressurized correctly, and that all tank valves are in the open position.

7.1 Temperature

Product temperature can affect foam quality. If the product temperature is below +18 °C (65 °F), poor quality foam may result. The ideal temperature is +22 °C (72 °F), minimum +20 °C (68 °F). See Section 11, Tank Heating.

7.2 Troubleshooting

Problem: Spray pattern becomes noticeably different (i.e. cone spray changes to stream)
Solution: This may be caused by dispensing foam with a used nozzle. Always inspect a nozzle prior to dispensing to make sure you have an unused nozzle mounted in the Insta-Flo™ Dispenser.
Problem: Foam or spray pattern does not react properly
Solution: Replacing the nozzle will usually correct the problem. If the problem persists and foam is friable or brittle, the foam is “ISO” rich, and a partial blockage of the “POLYOL” side exists. If foam remains soft or mushy, the foam is “POLYOL” rich and a partial blockage of the “ISO” side exists. If foam starts to become liquid, then there is a total blockage of one side. Remove the nozzle and carefully activate the dispenser into a waste container. Two chemical streams of approximately equal volume should flow. If streams are unequal, a blockage has occurred. Shut off the tank valve on the side that is flowing properly and activate the trigger full force for 15 seconds. Once the blockage is freed, turn off all tank valves. Clean any chemical from the face of the Insta-Flo™ Dispenser with a clean rag and reapply petroleum jelly. Insert an unused nozzle, open all valves and dispense a test shot into a waste container. After curing, check the foam quality. If blockage occurs again, stop foaming, turn off chemical tank valves, eject the used nozzle, and release chemical line pressure by activating the dispenser into a waste container. Slowly loosen the hose connections at the tank valves. Clean chemical from the threads and replace with a new Insta-Flo™ Dispenser/Hose Assembly.

Reapply petroleum jelly to the face of the Insta-Flo™ Dispenser with a clean rag. Insert an unused nozzle, open all valves and dispense a test shot into a waste container. After curing, check the foam quality.

If the replacement of the Insta-Flo™ Dispenser/Hose Assembly does not solve the problem, please contact our technical staff at **+800 3876 6838.**

Section 7

Note: A variety of foam dispensing nozzles are available with alternative spray patterns and various dispensing rates.

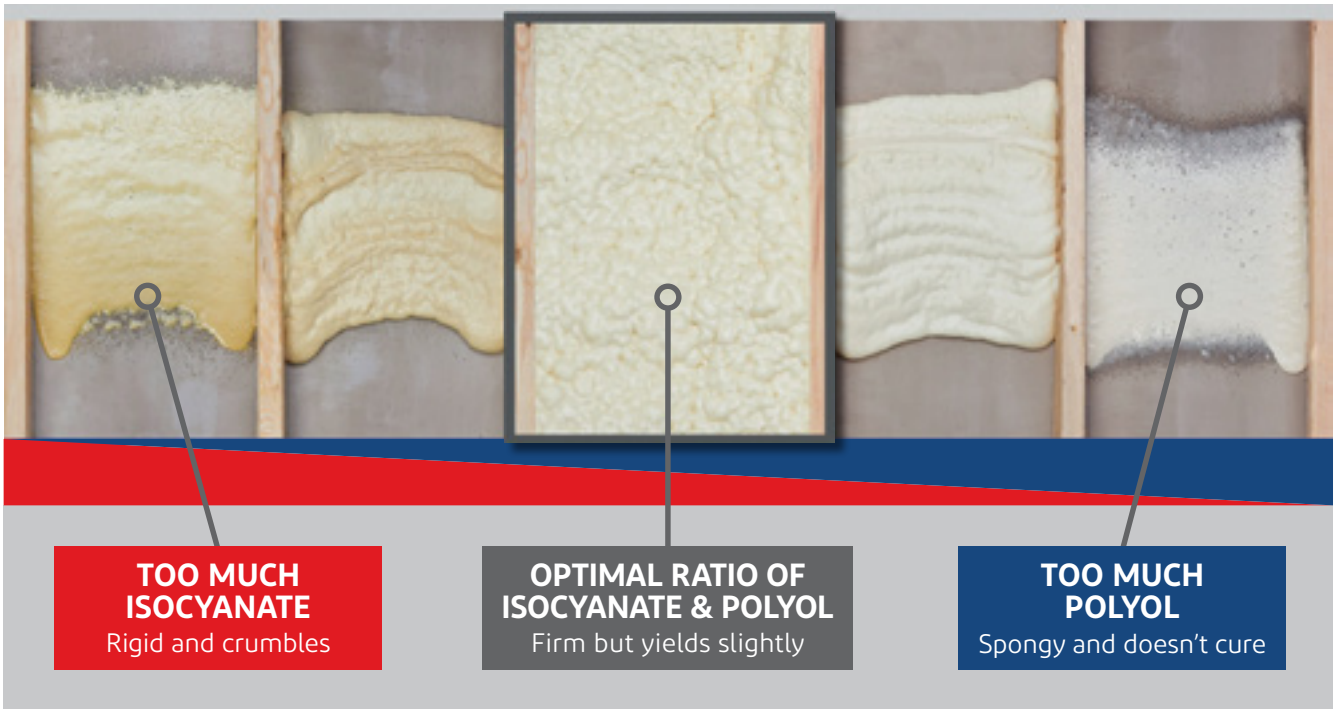
Problem: Hose becomes clogged
Solution: If the dispenser hasn't been used for two weeks or longer, activate the system for a few seconds by turning on the tank valves and squeezing the trigger fully without a nozzle attached to dispense twin streams into a waste container. This clears and re-pressurizes the hoses and should be done every two weeks when the system is idle. Re-apply petroleum jelly and reinsert used nozzle for storage.

Identifying and fixing an off ratio foam mix
Please perform these tasks before returning a kit.
Your ratio may be uneven if:

- Foam will not cure completely, is soft to the touch or sags off the substrate. This means the B tank is dispensing quicker than the A tank, causing an off ratio mix.
- Foam cures and looks brittle and flaky with "honeycomb" type areas. This means the A tank is dispensing quicker than the B tank, causing an off-ratio mix.
- Either of the above can occur if the amount of chemical left in the tank is low and tanks need to be replaced. Please always replace both tanks to avoid off ratio product due to pressure differences.

Solution:

1. Turn both A and B tanks off.
2. Remove nozzle.
3. Check temperature of the tanks. Should be +22 – +30 °C (70 – 85 °F) for optimal performance.
4. Roll or shake both A and B tanks for a few times.
5. Turn B tank on and purge into empty trash can.
6. Continue to engage the gun trigger for 10 seconds until consistent streams occur. Turn B tank off.
7. Turn A tank on and purge into empty trash can. Continue to engage the gun trigger for 10 seconds until a consistent stream is seen. Turn A tank off.
8. Connect a new spray nozzle.
9. Fully turn on both the A and B tanks.
10. Test spray into empty trash to ensure foam is curing correctly.
11. Complete the project.



Section 8

Disposal and Clean-up
Disposal must be performed in a well-ventilated area (preferably outdoors).
Never puncture or incinerate cylinders.

1. Wear the same PPE (personal protective equipment) as used while applying the two-component foam.
2. Liquids (A & B) remaining in Froth-Pak™ kits must be disposed of as solid waste foam material, not liquid chemicals. Steps 3 through 10 are intended guidelines necessary to convert any residual liquids into solids prior to proper disposal.
3. Carefully dispense liquids from the cylinders with the gun and nozzle attached. Dispense liquid materials out of the cylinder(s) as foam until one or both components/ cylinder(s) are empty.
4. Carefully remove the nozzle from the gun and continue to depressurize the cylinder(s) by dispensing the liquid materials into a waste container lined with a plastic bag that has adequate absorbent (e.g., sawdust, kitty litter, dry absorbent) in the bottom.
5. Carefully close both cylinder valves completely, then operate the gun trigger to empty and depressurize the hoses.
6. Lift each cylinder. The cylinder should feel empty, with no sloshing of liquid.
7. Carefully remove the hoses from the cylinders.

Use caution in case there is some residual liquid material and/or pressure still in the hoses. Place hose in plastic bag with absorbent material as in Step 4.

8. Carefully place cylinder(s) over a waste container lined with a plastic bag. Slowly open the valves on the cylinder(s) to catch any residual material. With cylinder pointed away from face, allow pressure to completely vent. Always handle and vent cylinders in a well-ventilated area while wearing all proper respiratory protection.

CAUTION: There is potential that a hose is blocked and the tank is not yet empty. If the cylinder feels heavy, appears to be under too much pressure, or contains too much material, close the valve. In this case, the cylinder needs to be disposed of as a hazardous waste and cannot be emptied using these procedures.

9. Absorb any remaining liquids collected in Step 8 with dry oil absorbent material as in Step 4. Once mixed thoroughly, it can be disposed of as ordinary industrial waste.
10. If the waste container contains an excess amount of "A" side versus "B" side, spray a small amount of water over the waste material but not enough to have a pool of liquid. Allow container and waste material in the plastic bag to vent while protected from the for 24 – 48 hours. After this time, tie the bag loosely and dispose of the solid waste as ordinary industrial waste. If waste contains more B side than A side, then mix the material with a stick to ensure all liquids are absorbed adding more absorbent as necessary and dispose of as ordinary industrial waste.
11. EMPTY and VENTED cylinders can be disposed of as scrap, recycle steel or ordinary industrial waste.

IMPORTANT
Empty and vented cylinders can be disposed of as scrap, recycle steel or ordinary industrial waste.
- Plan project carefully to completely empty each cylinder before starting a new one.
- When finished, spray foam into a cardboard box to empty the cylinders.
- Empty cylinders may be recycled to reclaim the steel.
- Cylinders containing polyol or isocyanate must be disposed of as hazardous waste and cannot be recycled or sent to a municipal landfill.
- Follow all country regulations when disposing of cylinders and handling hazardous waste.
- Pieces of cured foam are considered inert and can be disposed of as regular trash.

The below information is provided as a courtesy for customers and DuPont believes that it is accurate. However, the customer is ultimately responsible for determining whether the information in this document is appropriate for customer's use and for ensuring that the customer's workplace and disposal practices are in compliance with applicable laws and other government enactments. If you have any questions regarding applicable disposal procedures, contact the appropriate government official. DuPont assumes no obligation for poor foam quality, refer to the Troubleshooting section, Section 7, of this manual.

Section 9

Application Notes

9.1 Yield Notes
Yields are based on the free rise of the total weight of the liquid materials in the tanks. Many factors affect the yield in field applications.

9.1.1 Operator Technique
For best results, apply even layers of foam. When spraying 10mm thickness of uncured foam it will produce 25-30mm thickness of fully cured foam.

9.1.2 Application
Avoid spraying over rising foam.

9.1.3 Temperature
To ensure proper chemical mix, reaction, cure, and optimum yields, chemicals should not be dispensed if the chemical temperature is below +18 °C (65 °F). Insufficient operating temperatures can cause improper mix, extend cure time, and adversely affect final physical properties and yields.

NOTE: When using polyurethane foam, estimate 10 % more foam than is required. This yield buffer is recommended so that you will not run out of chemical on a job site.

Section 10

Transportation

Follow all country transportation requirements.
Caution should be used when the vehicle is left unattended

- In winter, the kit may get too cold.
  The kit needs to be stored above +5 °C (45 °F), and is best to be sprayed at +24 °C (75 °F).
- In summer, cars and trunks can get too hot.

See Section 5 for storage guidelines.

Section 11

Tank Heating

When the temperature of the liquid chemical inside the Froth Pak™ tanks is below +18 °C (65 °F), an external heat source may be required.
Heating the tanks is NOT required when the temperature of the liquid chemical is above +18 °C (65 °F).
Only use recommended heating blankets or ambient air to warm the tanks.
The heating temperature should not exceed +40 °C (104 °F).
Keep out of direct sunlight.

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Froth-Pak™

For more information visit
www.dupont.co.uk/products/froth-pak-foam-systems.html
or call +800 3876 6838

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