

FOR PROFESSIONAL USE ONLY

POLYSET® CR-20® & POLYSET® BOARD-MAX

COMMERCIAL ROOFING ADHESIVES

OPERATING INSTRUCTIONS

TWO-COMPONENT DISPOSABLE KIT

 **POLYSET™**



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A16602 – 02/2017

Instructions for Use

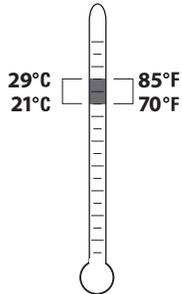
When spraying the dispensing unit for the first time or when starting a new kit, it is recommended to trigger the gun only 1/2 to 3/4 open, until the desired output is achieved. This controllable metering ability is a major advantage of this dispensing unit. It allows the user complete control of the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

Application Temperature

For best results, all surfaces to be bonded must be clean, dry and free from dirt, dust, oil, loose paint, wax or grease, etc. The temperature of the adhesive should be between 70°-85°F (21°-29°C). The surfaces being bonded should be at 40°F (4°C) or above for CR-20. The surfaces being bonded should be at 30°F (6°C) or above for Board-Max. Temperatures outside this range may affect bonding range, dispensability and performance of the product. For specific product information, see TDS (available at www.icpadhesives.com).

SET-UP PROCEDURE

Initial Prep

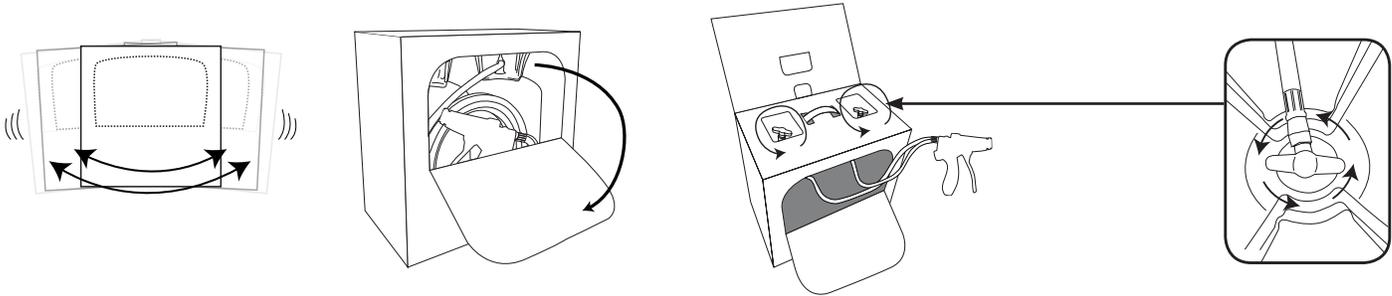


Typically chemical should be between 70–85°F (21–29°C). See TDS for formula specific shaking and temperature recommendations.



Wear protective glasses with sideshields or goggles, nitrile gloves, and clothing that protects against dermal exposure. Recommend using in a well ventilated area with certified respiratory protection or a powered air purifying respirator (PAPR). See SDS (available at www.icpadhesives.com).

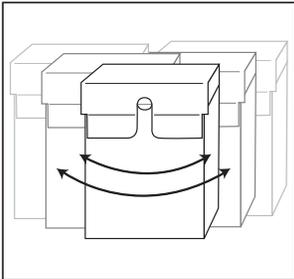
Single Package Two-Component Model



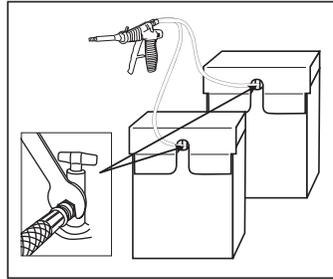
1. Shake kit for 1–2 minutes before use to ensure proper mixing.
2. Push in top of front panel to open. Pull down flap for dispensing unit hose assembly. Remove nozzle packet and read instructions.
3. Open top flap of box to expose cylinder valves. Extend attached dispensing unit hose assembly.
4. Open the valves completely by turning the valves COUNTER CLOCKWISE. Top flap may be removed or left in place during use or storage.

Dual Package Two-Component Model

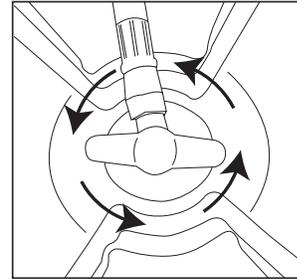
There are two cylinders per system. The system is comprised of an “A” cylinder and a “B” cylinder. These two cylinders must have matching fill dates to be used together. The cylinders can only be used in the upright position (Never open the valves unless the cylinders are upright). The lids on the boxes are designed to shield the cylinders from direct sunlight and keep the product from getting too hot. For this reason, the box lid should remain closed during use.



1. Shake each cylinder for 1–2 minutes before use to ensure proper mixing. Chemical should be between 70°-85°F (21°-29°C). See TDS for formula specific shaking and temperature recommendations.

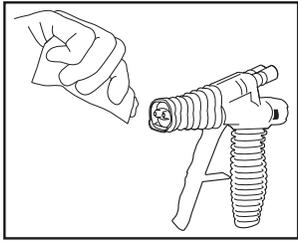


2. Chemical should be between 70°-85°F (21°-29°C). See TDS for specific temperature recommendations. Open kit. Remove nozzle packet and read operating instructions. Thread red coded hose to A component cylinder and tighten with supplied 9/16” wrench. Thread black coded hose to B component cylinder and tighten.

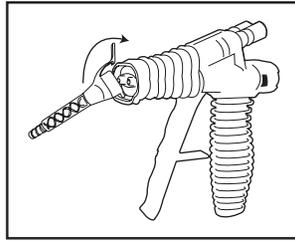


3. With cylinder upright, open cylinder valves completely. Cylinder valves must be upright during use. DO NOT remove the cylinder from the box after connecting the hoses. Keep the lid closed and avoid direct sunlight.

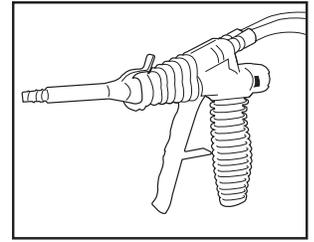
To Attach Nozzle - Handi-Gun® Dispensing Unit



1. Before attaching nozzle, use petroleum jelly on face of gun.



2. Insert bottom tab of nozzle into bottom slot of dispensing unit.
3. Attach top latch by pushing towards back of unit, until an audible “snap” is heard.



4. Unit is ready to use.
5. After attaching nozzle, spray into “test shot” receptacle.
6. To remove used nozzle, push top latch up and forward to unsnap.

Adhesive Test Spray

When spraying 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 and spray pattern is achieved. This controllable metering ability is a major advantage of the gun, allowing the user complete control of the flow rate and spray pattern that best fits the application. Apply several test shots on plastic or cardboard before beginning the job.

EXTREMELY IMPORTANT - WHEN SPRAYING IS STOPPED FOR MORE THAN 30SECONDS, THE NOZZLE SHOULD BE REMOVED AND REPLACED WITH A NEW NOZZLE. The chemical in the nozzle will begin to cure and will clog the nozzle when spraying has stopped for more than a few minutes. If the trigger is pulled while a clogged nozzle is on the gun, the chemical from the cylinders (which is under pressure) will be blocked by the clogged nozzle and will cause a “back- up” of chemical into the hoses, which is called a crossover. The gun will no longer dispense chemicals in the right proportions and the Polysset adhesive will not function properly. This situation can be easily avoided by simply changing nozzle when spraying is stopped for more than 1 minute.

Colorwise® Temperature Warning Nozzles

Changes from clear to blue, indicating that the chemical has reached a cold temperature, below 60°F (16°C), and the adhesive should not be dispensed.

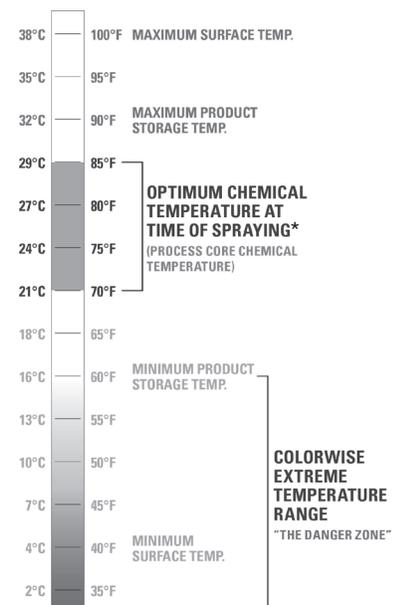
- Stop spraying and warm the chemical to the recommended temperature. See TDS for product specific temperature recommendations.
- Nozzle will change from blue to clear when chemical temperature is back in the acceptable range.
- Helps keep foam on ratio and maximizes yield.
- Available for use with Handi-Gun® Dispensing Units



The mixing chamber of the ColorWise nozzle will change from clear to blue when cold chemical is sprayed through it. Stop spraying and ensure proper chemical temperature to avoid off-ratio adhesive.



If proper chemical temperature is sprayed through a blue, cold nozzle, the mixing chamber of the nozzle will change back to clear, indicating that it is OK to spray. Notice that the top of the nozzle may remain blue.



*See TDS for specific temperature recommendations.

COLORWISE® NOZZLE CARE

- Apply a small amount of petroleum jelly to help keep the gun face clean from cured adhesive or contamination that could block one of the chemical ports.
- Nozzles are cleanable and solvent resistant. In a timely manner, the nozzles can be flushed of uncured foam with Polysolv.
- Adhesive will cure inside the nozzle in the same amount of time that adhesive becomes tack-free after being dispensed. To prevent clogs and ensure trouble free operation, change nozzle after 30 seconds of non-use.

“WHEN THE NOZZLE TURNS BLUE STOP YOUR CREW.”®

Optimum chemical temperature is between 70–85°F (21–29°C). While your nozzle may stay clear between the 56–69°F (14–20°C), the chemical is not conditioned properly. Therefore, when your nozzle does turn blue, your chemical has reached an extreme cold temperature and needs to be properly conditioned before resuming spray. See TDS for product specific temperature recommendations.

POLYSET® CR-20® ADHESIVE APPLICATION (Fleece Back Membrane)

Polyset® CR-20 can be used to adhere TPO, PVC and KEE Fleece Back membranes to a variety of substrates including: polyisocyanurate (Poly-ISO) insulation boards, DensDeck® and DensDeck Prime®, Securock®, structural concrete, smooth and granulated modified bitumen roof decks (recover).

Preparation

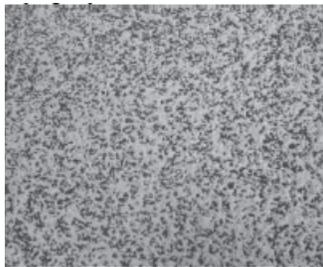
All surfaces to be bonded must be clean, dry and free of any debris and smooth with no surface contamination. Broken, delaminated, wet or damaged insulation or cover boards must be removed and replaced prior to application of Polyset CR-20.

Product Use

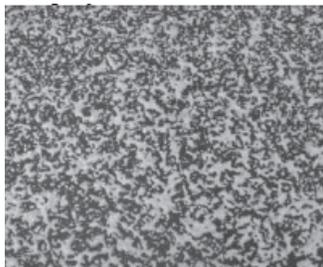
Polyset CR-20 is a single surface adhesive. It is spray applied in a “Spatter Pattern” onto the roof, insulation or cover board substrate by dispensing the adhesive in a spray pattern similar to the action required when hand watering a flower bed. The spatter pattern should yield a heavily textured, even coating of approximately ¼” to ½” nominal thickness height on the peaks of the spattered adhesive.

The seams of the membrane and the factory selvage edge must be protected from overspray of the Polyset CR-20. If overspray does contaminate the seam area, immediately clean the seam area with seam cleaner or Polysolv while the Polyset CR-20 is still wet. The bonding range of Polyset CR-20 is approximately 1-10 minutes from start of spraying and will vary according to ambient as well as substrate temperature. The amount of substrate area that the Polyset CR-20 is applied to ahead of the membrane should be monitored to prevent dry laid membrane. Care must be taken, particularly in high temperature environments (90°F (32°C) and above), to ensure that the adhesive has not dried or skinned over prior to embedding the membrane.

NOTE: Membranes can be applied once the adhesive has achieved sufficient bond strength to the immediate substrate to which it is adhered. It is recommended that the contractor inspect the installed insulation for proper adhesion and re-adhere any boards and/or corners that are not adequately attached.



HEAVY SPRAY PATTERN



SUGGESTED SPRAY PATTERN



LIGHT SPRAY PATTERN



CR-20 APPLICATION

POLYSET® BOARD-MAX ADHESIVE APPLICATION (Insulation & Coverboard)

Polyset® Board-Max can be used to adhere a variety of insulation and coverboards including: polyisocyanurate (Poly-ISO) insulation boards, DensDeck® and DensDeck Prime®, Securock®, structural concrete, smooth and granulated modified bitumen roof decks (recover).

Preparation

All surfaces to be bonded must be clean, dry and free of any debris and smooth with no surface contamination. Broken, delaminated, wet or damaged insulation or cover boards must be removed and replaced prior to application of Polyset Board-Max.

Product Use

To dispense adhesive, point the applicator's nozzle at the surface to be sprayed, holding it approximately 20" (50.8 cm) from the surface. Squeeze the trigger and move hand at a speed which delivers the desired adhesive "serpentine" ribbon. Polyset® Board-Max adhesive is applied in a serpentine ribbon placed at a maximum of 12" (30.48 cm) OC.

Insulation boards are to be placed based on string and tack test (1-4 minutes based on ambient conditions) and "walked-in" immediately after placement.

NOTE: Boards that will not lay flat due to cupping, warping or crowning, or surface irregularities of the substrate, should have weights placed on the boards until the Polyset adhesive has achieved adequate adhesion to hold the boards in place. When spraying stops for breaks, lunch or overnight turn cylinder valves off and place used nozzle on front of gun. When spraying is to be restarted, replace nozzle with new, unused nozzle, turn cylinder valves on and perform string and tack test.

NOTE: Check periodically for correct board adhesion.



BOARD-MAX APPLICATION



BOARD-MAX APPLICATION

Polyset Kit Storage and Re-Use

1. Close cylinder valves.
2. Do not store full cylinders at temperatures above 100°F (38°C). Do not store partial or used cylinders above 90°F (32°C) or below 50°F (10°C). Kits stored below 70°F must be given sufficient time for the chemical to warm up to 70–85°F (21–29°C), see TDS for formula specific temperature recommendations.
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 Polysolv. 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 CYLINDERS.** Keep under pressure. Do not flush/clean hoses with air, water or solvent. Removing and/or cleaning hoses may compromise the adhesive.

To reuse dispensing unit after storage:

1. 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 adhesive or chemical from the face of the dispensing unit. Use of enclosed petroleum jelly is recommended to cover the face of the unit in order to prevent further contamination or if chemical is accidentally leaked into this area.
3. Shake kit or cylinders for 1-2 minutes to ensure proper mixing. Polyset CR-20 adhesive should be between 70°-90°F (21°-32°C). Polyset Board-Max adhesive should be between 70°-85°F (21°-29°C). See TDS for formula specific shaking and temperature recommendations.
4. Fully open all cylinder valves.
5. Dispense into waste container to verify that both chemicals are being dispensed in approximately equal streams. 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 adhesive 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.

VERY IMPORTANT: As the hoses are exposed to the heat of the sun, especially in the summer months, the pressure in the hoses will build up. Purging the hoses for a few seconds prior to spraying relieves the excess pressure and allows the chemical to flow in the proper proportions.

Disposal Procedures

1. DO NOT INCINERATE TANKS.

2. Use proper Personal Protective Equipment when disposing of cylinders.
3. Dispense the adhesive into a waste container like a cardboard box or plastic bag. Depressurize the used cylinders using the dispensing unit with a new nozzle attached. Spray the adhesive until one of the components/cylinders no longer sprays chemical.
4. Remove the nozzle and then continue to depressurize by dispensing the chemicals into a waste container (a box lined with a plastic bag) that has adequate industrial liquid absorbing medium in the bottom. Dispense the residual chemicals until the pressure is down to a minimum or there are just large bubbles in the hose.
5. Close the cylinder valves completely, and then operate the dispensing unit again to empty and depressurize the hoses. Use a 9/16" wrench and remove the hoses from the cylinders. Use caution in case there is some residual chemical and/or pressure in the hoses.
6. Invert the cylinder and point away from face. Slowly open the cylinder over the waste container to catch any residual spray.
7. Return the cylinder to an upright position. Shake the container; there should not be any sloshing of liquid. Make sure to leave valves OPEN -do not close.

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

NOTE: After dispensing if one cylinder has chemical left in it; treat as hazardous material.

Troubleshooting Guide

Equivalent flow of both A-component and B-component is required with all two-component polyurethane systems in order to obtain proper performance, curing and optimum yields. If a problem occurs, the cause is typically due to uneven chemical flow that is caused by a blockage of one of the chemicals.*

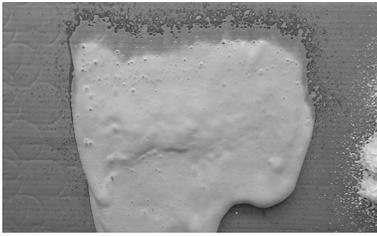
PROBLEM	POSSIBLE CAUSE	SOLUTION
Poor chemical flow	Cylinder valves not fully open	Turn cylinder valves counter-clockwise until they stop
	Cylinder valves in incorrect position	Place cylinder valves in upright position
	Material is too cold	Chemical temperature must be between 70°-85°F (21°-29°C)**
Adhesive leaking from hose connections	Hoses not tightened	Tighten all hose fittings
	Cross-threaded hose	Replace gun hose assembly
Dark crunchy adhesive/ off-ratio (A-rich)	Material is too cold	Chemical temperature must be between 70°-85°F (21°-29°C)**
	Clogged nozzle	Replace nozzle
	Blockage of one chemical port	Clean gun face and apply petroleum jelly
	Gun crossover	Replace hose
White spongy or shrinking adhesive/off-ratio (B-rich)	Material is too cold	Chemical temperature must be between 70°-85°F (21°-29°C)**
	Clogged nozzle	Replace nozzle
	Blockage of one chemical port	Clean gun face and apply petroleum jelly
	Gun crossover	Replace hose
Sputtering from nozzle	Cylinders are empty	Switch to new kit
	Clogged nozzle	Replace nozzle
	Hose blockage	Replace hose

*If kit is still not fully operational, stop spraying and contact the distributor where purchased.

**See TDS for specific temperature recommendations.

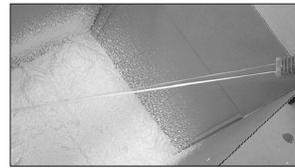
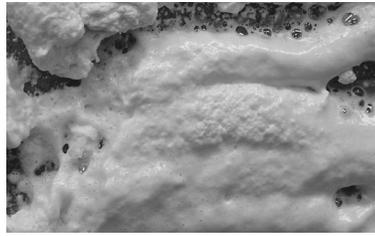
“A-Rich” Adhesive:

Crunchy, friable, slow or non curing. Darker brown in color.



“B-Rich” Adhesive:

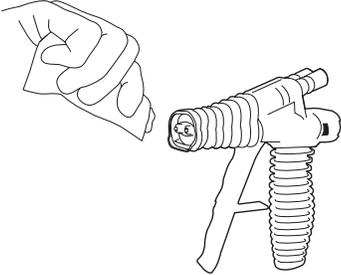
Softer, white colored adhesive, with shrinkage.



- With the nozzle removed, check that both chemicals flow with equivalent force.
- Partial or complete blockage of one chemical port will result in off-ratio adhesive.

*Handi-Gun® being shown for reference only.

Nozzle Care and Usage



Apply a small amount of petroleum jelly, which is provided with each kit, to help keep the gun face clean from cured adhesive or contamination that could block one of the chemical ports. Change nozzles frequently! Adhesive will cure inside the nozzle in the same amount of time that adhesive becomes tack-free in the air.

Polysolv

All Handi-Gun® 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 Polysolv or other suitable solvent. Gun face can be kept clean with the use of petroleum jelly on the face or with a soft cloth to remove residue. Cleaning a nozzle more than twice is not recommended.

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.

Warnings

WARNINGS: Polyset® adhesive products are composed of a diisocyanate, hydrofluorocarbon blowing agent and polyol. Consult the product's SDS (available at www.icpadhesives.com) for specific information. The urethane foam adhesive 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. Recommend using in a well ventilated area with certified respiratory protection or a powered air purifying respirator (PAPR). For more information regarding a certified respiratory program please visit <http://www.cdc.gov/niosh/>. To view or receive a copy of ICP Adhesives & Sealants, Inc.'s respirator program, please contact ICP Adhesives & Sealants, Inc. Customer Care at 1.800.321.5585. Personal Protective Equipment can be purchased through ICP Adhesives & Sealants, Inc. distribution by purchasing the Polyset® Contractor Safety Kit (F65251). The Contractor Safety Kit includes: nitrile gloves, contractor safety glasses, and a NIOSH approved negative pressure half mask respirator. For professional use only. **WARNING:** Non-Flammable Compressed Gas. Keep away from heat. Smoking and open flames, including hot work, should be prohibited in the vicinity of a foaming operation. Avoid contact with skin and eyes. May cause sensitization by inhalation and/or direct skin contact. Avoid prolonged or repeated breathing of vapor. **KEEP OUT OF REACH OF CHILDREN.** **FIRST AID:** In any first aid case CONSULT A PHYSICIAN. EYES: Flush with water for at least 15 minutes. SKIN: Remove contaminated clothing. Wash skin with plenty of soap and water. Cured adhesive must be removed manually. **INHALATION:** If breathing is difficult, give oxygen. If breathing has stopped, give artificial respiration. **INGESTION:** give large quantities of water. Do NOT induce vomiting. Contact a physician immediately in any first aid situation. Consult the product's SDS (available at www.icpadhesives.com) for specific information. Contents: polymeric diisocyanate, hydrofluorocarbon blowing agent, polyol, amine catalyst.

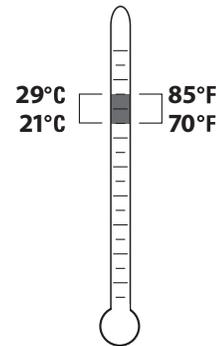
Important

Always read all operating, application and safety instructions before using any products from ICP Adhesives & Sealants, Inc. Use in conformance with all local, state and federal regulations and safety requirements. Failure to strictly adhere to any recommended procedures and reasonable safety precautions shall release ICP Adhesives & Sealants, Inc. of all liability with respect to the materials or the use thereof. For additional information and location of your nearest distributor, call ICP Adhesives & Sealants, Inc. 330.753.4585. **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 conditions and particular application. Read all product directions and safety information before use. This product is organic, and therefore, is combustible. Consult local building codes for specific requirements regarding the use of cellular plastics or urethane foam adhesive in construction.

Polyset® Spray Foam Adhesive products are composed of a diisocyanate, hydrofluorocarbon blowing agent and polyol. Consult the product's SDS (available at www.icpadhesives.com) for specific information. The urethane foam adhesive 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 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 SDS (available at www.icpadhesives.com) for specific information. For professional use only.

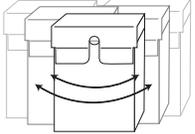
Temperature and Storage

Chemical temperature is very important, store kits at or above 70°F (21°C) prior to use. Cold chemical may lead to off-ratio flow. Optimum chemical temperature is 70–85°F (21–29°C), see TDS for formula specific temperature recommendations.



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.

QUICK FACTS

IDEAL CHEMICAL TEMPERATURE	AMBIENT/DECK TEMPERATURE		SHAKING RECOMMENDATIONS
<h1 style="margin: 0;">80°F</h1> <p style="margin: 0;">(27°C)</p>	<p style="margin: 0; font-weight: bold;">CR-20</p> <h2 style="margin: 0;">40-100°F</h2> <p style="margin: 0;">(4-38°C)</p>	<p style="margin: 0; font-weight: bold;">BOARD-MAX</p> <h2 style="margin: 0;">30-100°F</h2> <p style="margin: 0;">(-1-38°C)</p>	<h1 style="margin: 0;">1 - 2</h1> <h2 style="margin: 0;">MINUTES</h2> 
SDS, TDS & OPERATING INSTRUCTIONS	SPECIAL RECOMMENDATIONS		PERSONAL PROTECTIVE EQUIPMENT
<p>Scan here to be directed to the SDS, TDS and Operating Instructions page available on the website.</p> 	<ul style="list-style-type: none"> Use only in a well ventilated area. To ensure trouble free operations, change nozzle after 30 seconds of non-use. Please read through the TDS, SDS and Operating Instructions prior to use. 		<div style="display: flex; justify-content: space-around; font-size: 8px;"> <div style="text-align: center;"> <p>Safety Glasses</p>  </div> <div style="text-align: center;"> <p>Covers Skin</p>  </div> <div style="text-align: center;"> <p>Nitrile Gloves</p>  </div> </div> <div style="display: flex; justify-content: space-around; font-size: 8px; margin-top: 5px;"> <div style="text-align: center;"> <p>Respirator and/or Vapor Respirator OV/Pre-filter</p>  </div> <div style="text-align: center;"> <p>Avoid Breathing Vapors Provide Good Ventilation</p>  </div> </div> <p style="font-size: 6px; text-align: center;">Product Stewardship Guidelines A14009</p>
 <p>For additional information refer to www.icpadhesives.com • 1.800.321.5585</p>			