



Tychem.

## USER MANUAL FOR DUPONT™ TYCHEM® NON-ENCAPSULATED GARMENTS

### SAFETY CONSIDERATIONS

#### **IMMEDIATELY STOP WORK IF PERSONAL PROTECTIVE EQUIPMENT (PPE) FAILS.**

If any item of the personal protective equipment ensemble fails during use, immediately cease work activity, retreat from hazard zone, safely remove the PPE (may require decontamination procedure), determine the cause of the PPE failure and re-evaluate the selection and use of the PPE for that task.

Be sure to read, understand and follow the information in this manual and all applicable governmental occupation safety and health statutes. Serious injury or death may occur from improper use of these garments. These garments must be selected and used in accordance with applicable personal protective equipment regulations, which in the United States is 29 CFR 1910.132. For users of these garments outside of the United States, consult national or other applicable personal protective equipment laws and regulations.

Users must read this guide thoroughly and should take the following precautions into consideration:

- Avoid flame contact. These suits are not intended for exposure to an open flame; however, Tychem® ThermoPro garments have been tested and certified to NFPA 2112, Standard on Flame-Resistant Garments for Protection of Industrial Personnel Against Flash Fire. Tychem® 2000 SFR garments provide secondary flame resistance; they must be worn over appropriate primary flame resistant garments (such as Nomex® IIIA). Tychem® 2000 SFR garments should not be worn alone in areas where flame exposure may occur.
- Do not knowingly enter an environment in which the concentration of flammable gas/vapor or combustible dust is within flammable or explosive limits when wearing a Tychem® garment, including Tychem® ThermoPro. Retreat immediately if you encounter such an environment.
- No Tychem® garment, including Tychem® ThermoPro, is intended for fire-fighting activities, nor for protection from hot liquids, steam, welding, or thermal radiation. Tychem® ThermoPro fabric was tested to EN ISO 11612:2015 (Protective clothing—Clothing to protect against heat and flame—Minimum performance requirements) and was rated as Class D1 for molten aluminum and Class E2 for molten iron.
- Good practice is to minimize, as much as possible, continuous exposure to any known hazardous substance.

- If you develop any of the following symptoms while you are wearing a Tychem® garment, immediately leave the contaminated area, undergo field decontamination, and remove (doff) the garment:

Fever	Unusual odor or taste
Difficulty breathing	Eye or skin irritation
Nausea	Narrowing or dimming of vision
Excessive Tiredness	Claustrophobia
Dizziness	Loss of balance or orientation
Numbness	

Tychem® garments will not protect the wearer in all situations and environments or protect the wearer from all hazardous materials. A trained and qualified safety professional must select the chemical protective clothing and other PPE based on a hazard assessment. It is your responsibility as a user of this garment to determine the level of exposure and the proper personal protective equipment needed. Many performance properties cannot be tested by the users in the field. Refer to DuPont™ SafeSPEC™ ([www.safespec.dupont.com](http://www.safespec.dupont.com)) for information regarding performance data for Tychem® garments.

## Wearer Qualifications

Do not wear these garments unless you are properly trained in their use. You must be in good physical condition to wear these garments. Consult a physician before donning one of these garments to ensure you are capable of wearing these garments and all required respiratory equipment under the expected work conditions and environment.

## Other Personal Protective Equipment

To help protect you while wearing a Tychem® garment, the use of other personal protective equipment (PPE) items is often required based on the hazard assessment. PPE selection must be conducted by a trained and experienced safety professional. Additional protective equipment may be required to deal with hazards such as, but not limited to, the following:

- Flammable or Explosive Environment
- Extreme Heat (Heat Stress)
- Extreme Cold (Hypothermia)
- Physical Hazards (Sharps, Puncture, Rough Surfaces, Falling Debris)
- Slipping Hazards
- Visibility Requirements
- Fall Protection
- Contamination Avoidance

## Footwear

For coveralls with attached socks, you must wear separate, user-supplied, protective footwear. The socks attached to Tychem® coveralls must be worn inside protective footwear. Failure to wear appropriate user supplied footwear will damage the attached sock. It is the user's responsibility to verify that appropriate footwear has been selected and used based on a hazard assessment.

## Gloves

Some Tychem® suits have attached chemical resistant gloves. Contact DuPont for information regarding glove system details for specific suit models. It is the user's responsibility to verify that appropriate gloves have been selected and used based on a hazard assessment.

## GARMENT INSPECTION, MAINTENANCE, AND TESTING

### Garment Inspection

The wearer must inspect all Tychem® garments at the following times to determine that the suit has not been damaged or compromised:

1. Immediately upon receipt from supplier.
2. Before it is placed in service to be worn.
3. After a garment is worn and before the garment is placed in service to be worn again. Do not use contaminated, damaged or altered garments.
4. Inspect annually.

GARMENT MAINTENANCE SCHEDULE				
Work to be Performed	Upon Receipt	Prior to Use	After Each Use	Once Per Year
Garment Inspection	X	X	X	
Cleaning (for hygienic purposes only; not decontamination)			X	
Inflation Test (Level A)			X	X
Exhaust Valve Diaphragm Inspection (Level A)			X	X
Closure Lubrication	As Required			

### Garment Inspection Steps:

1. Lay the garment on a clean, smooth surface.
2. The inspection should include all areas of the suit: body, visor (if present), and gloves (if present).
3. Use a flashlight inside the suit to examine for holes, cuts, or tears. Confirm that any suspected visual imperfection is actually a void by using a small amount of water to confirm penetration. **NOTE: For taped seam garments, visible stitch holes which are covered by seam sealing tape do not constitute a defect.**
4. Examine garment seams. For taped seam garments, look for areas where seam tape has lifted away from the suit or where seam tape does not fully cover stitch holes. For bound seam garments, look for areas where the binding (top) fabric piece is missing or not fully attached. For serged seam garments, look for areas where the sewing thread is missing or not fully attached.
5. Examine the entire garment for signs of damage. A breach, rupture, or hole of any component of the suit is cause for rejection. Note that for taped seam garments, the fabric, visor (if present), gloves (if present), and seam areas may have visual blemishes that do not affect barrier performance. Such blemishes can include areas adjacent to the seam tape that appear to be dull, white, or frosted.
6. Examine the garment visor (if present) to ensure it offers a clear visual field.

7. Examine the garment gloves (if present) to ensure that they are in good condition and properly attached to the suit. Gently pull on the gloves to ensure that they are firmly attached to the suit. **NOTE: You can potentially damage the gloves by pulling with excessive force.**
8. Examine the garment zipper and zipper cover (if present) to make sure they are in good working order. Operate the zipper. Lubricate the zipper using paraffin wax, if needed. Engage the hook and loop tape (if present) on the zipper storm flap(s) to ensure appropriate adhesion. If the garment has double sided adhesive tape on the storm flap(s), ensure that there is tape along the length of each flap; do not remove protective tape covering until the suit is donned for use.
9. Examine any garment snaps, etc. to ensure they are in good working order.
10. Examine elastic (if present) to ensure it is not damaged.
11. Examine garment labels to ensure they are attached and are legible.

## Cleaning

Garments, except Tychem® 2000 SFR and Tychem® 6000 SFR garments, that are not contaminated with hazardous substances can be cleaned. Use water, mild dishwashing liquid, a soft brush, and hand towel to remove the non-hazardous substance that soiled the garment. Thoroughly rinse the garments with clean water and allow it to air-dry. Do not dry-clean or machine-wash these garments. Do not use hot air or a tumbling air dryer to dry these garments. Do not use bleach or harsh cleaning agents on these garments if they are intended to be re-used. Cleaning procedures are not an acceptable procedure for decontamination (See Section on Field Decontamination). The user should develop and implement a decontamination procedure for all the chemicals to which the suit has been exposed. Tychem® 2000 SFR and Tychem® 6000 SFR garments should not be cleaned or laundered; dispose of them after use.

## Closure Lubricants

The wearer can lubricate a zipper closure that is difficult to operate. Apply paraffin wax lightly on the teeth of the closure while open. After lubricant is applied, close and open the zipper several times to ensure smooth function and to remove excess lubricant.

**NOTE: EXCESSIVE FORCE OR IMPROPER TECHNIQUE CAN DAMAGE LIQUID-TIGHT ZIPPERS.** When opening or closing the zipper, use one hand to hold the zipper assembly near the slider while pulling the slider in a direction that is parallel to the line of the zipper assembly. Using excessive force or not pulling the slider in the direction of the zipper installation can lead to permanent damage to the zipper which negatively affects a garment's liquid-tight seal.

## Garment Repair

Do not use a damaged, altered, or contaminated garment. If an uncontaminated or unaltered garment fails a visual inspection, contact the distributor from whom you purchased the suit or DuPont Personal Protection at 800-931-3456 to determine if the garment can be returned for repair. **Note: Charges may be incurred; refer to the warranty section in this document.**

Contaminated garments will not be accepted for repair. With each returned garment, you must provide a declaration that the garment has not been exposed to chemicals or to biological pathogens. **DO NOT RETURN A GARMENT WITHOUT PRIOR AUTHORIZATION FROM DUPONT PERSONAL PROTECTION CUSTOMER SERVICE.**

## Glove Replacement

Contact DuPont Personal Protection at 800-931-3456 to determine if the attached gloves on your garment can be replaced.

## Recommended Duration of Use

Tychem® garments may be used for 5 years from date of manufacture as long as all of the following conditions are met:

- 1) The garment has been stored properly (see section on Storage Conditions)
- 2) The garment has not been damaged, altered, or contaminated
- 3) The garment passes a full visual inspection (as outlined above)

After 5 years, if all of the above conditions are met, it is at the sole discretion of the end-user whether to continue using the suit or to retire the suit. It is suggested that garments be labeled and retired to "Training Use Only" after 5 years.

Uncontaminated garments that do not pass a visual inspection should be retired from service and labeled "For Training Use Only" or discarded after mutilation.

## Storage Conditions

Store Tychem® garments in a cool, dark, dry location free of dirt and insects. Sunlight, ozone, high temperatures (>120 °F [49 °C]), exhaust fumes, compression under heavy weight and/or sharp protrusions are some conditions known to degrade or damage the materials in these suits.

Store Tychem® garments such that they will not be stepped on nor have heavy objects placed on top of them.

## Sizing Considerations

Verify the fit of your Tychem® garment before actual use. Use the sizing chart found at the end of this document to select the appropriate size based on height and weight. Obtain the size suit you intend to wear, don that size garment, and perform a series of exercises to simulate your movements under actual work conditions. A garment larger or smaller than suggested in the chart may be preferred. Sizing fit tests must include outer boots, head protection and other PPE and accessories that the wearer will use during actual use.

## DONNING AND DOFFING COVERALLS

Donning and Doffing instructional images are shown below.

### Donning and Doffing the Protective Garment



## Donning Coveralls

1. Conduct a visual inspection of the garment as described above before beginning the donning steps.
2. Remove all jewelry and personal items (pens, key rings, badges, pagers, knife cases, etc.) that might damage the garment.
3. Open the garment closure completely.
4. Check the garment size label to verify the suit meets your requirements.
5. Inspect outer boots (if applicable) per the manufacturer's instructions and place them nearby.
6. If the garment has attached socks, remove your shoes. The attached socks are to be worn inside outer chemical boots (not provided with the Tychem® suit). The attached socks do not have adequate durability or slip resistance to be worn as the outer footwear covering.
7. Insert your feet into the garment legs and down into the attached socks, if so equipped. Stretch your legs to maximum extension while pulling garment up. Don outer chemical boots, if applicable. If the garment is fitted with boot flap covers, first pull boot flap covers up and then don your outer boots. Then pull the boot flap covers down over the outer boots as far as possible.
8. Continue pulling the garment up to your hips.
9. Don protective headgear and communication equipment as appropriate.
10. Place arm into one sleeve and pull the garment sleeve to your shoulder. Make sure your hand is securely inside the glove(s), if attached. Repeat for other arm.
11. If gloves are not attached to the garment, next don your gloves. Pull the sleeves of the garment over the gauntlet of the gloves. Do not rely on taping to provide a liquid-tight seal. Only use tape to hold the sleeve in position over the glove gauntlet. If a liquid-proof seal between the glove and sleeve is required, then wear a garment with attached gloves.
12. If a respirator is to be worn, don the face piece and check its function.
13. Pull the hood (if present) over your head making sure not to impact the respirator face piece seal.
14. Slowly close the suit zipper fully.
15. Carefully close and secure the flaps over the zipper (if present).

## Doffing Coveralls

1. If your garment has been contaminated or is suspected of being contaminated, you must first undergo field decontamination before removing the garment.
2. Continue to use your respirator until the garment has been doffed and removed.
3. While standing, open the zipper flaps (if present) and then open the zipper.
4. Peel the hood (if present) off your head and down and away from your shoulders to avoid contaminating your inner clothing or skin. Remove your arms from the sleeves. If separate gloves are present, remove them being careful to avoid cross-contamination of inner clothing or skin.
5. Lower the garment to below your hips and sit down if possible. Do not touch the outside of the garment as it may be contaminated. Remove your outer boots (if present), then pull the garment off of your legs. Carefully take the garment away from the doffing area and dispose of it appropriately.
6. Once the garment has been completely removed, you can doff the respirator.

## FIELD DECONTAMINATION

The purpose of field decontamination is to permit the wearer to remove the garment without being harmed by contaminants on the outer garment surface. Field decontamination does not make a garment safe for re-use. If you suspect or know that a garment has been contaminated, it must be discarded after field decontamination.

## DECONTAMINATION

DuPont™ Tychem® garments are designed for limited-use applications; they can be worn until damaged, altered or contaminated. If the garment is damaged during use, retreat immediately, undergo field decontamination, and then discard the garment. If the garment is contaminated during use, it must be discarded after field decontamination and doffing.

It is the responsibility of the safety professional to determine that the suit has not been contaminated and can be safely re-used.

## INSPECTION BEFORE RE-USE

Thoroughly inspect a used and/or cleaned garment following the instructions provided in this manual before re-use. Do not re-use the garment if it fails the inspection or shows sign of alteration, damage or contamination.

## GARMENT RETIREMENT CONSIDERATIONS

Retire Tychem® garments from service if any of the following criteria are met:

- Garment fails to pass inspection.
- Garment is altered, abraded, cut, torn, punctured, or otherwise breached.
- Garment has had prolonged exposure to intense heat and/or ultraviolet light.
- Garment has been contaminated as determined by the safety professional responsible for having knowledge of use and exposure conditions.
- Garment has had contact with an oxidative, corrosive or reactive decontamination agent.

Retired garments that are not contaminated may be labeled "For Training Use Only".

## DISPOSAL

If not contaminated, Tychem® garments can be disposed of per local regulations as non-hazardous waste. Garments that have been contaminated with hazardous materials must be disposed of as hazardous waste per local regulations after field decontamination. Before discarding, mutilate garments by cutting off a sleeve or a leg so they cannot be worn again.

## TEMPERATURE RANGES

Do not store Tychem® garments at temperatures exceeding 120 °F (49 °C).

Tychem® garments can be used in ambient environments from -13 °F (-25 °C) to 190 °F (88 °C) for short durations. However, Tychem® garments offer limited thermal insulation to protect the wearer's skin from prolonged exposure to hot or cold temperatures. The usable temperature range for the materials in the garment can exceed the temperature at which human skin burn injury may occur. Additionally, chemical permeation testing is typically performed at 81 °F (27 °C). Chemical permeation rates may be affected by temperature.

## LIMITATIONS OF USE

**It is the user's responsibility to determine the level of exposure and the proper personal protective equipment needed.** Tychem® garments are not suitable for use in all situations and environments or with all hazardous materials. All decisions regarding the selection and use of chemical protective clothing must be done by trained and qualified safety professionals.

Do not use Tychem® garments for protection against ionizing radiation.

Do not use Tychem® garments for protection from cryogenic liquids or gases. A cryogenic liquid is defined by NFPA 991 as "a refrigerated liquefied gas having a boiling point below -130 °F (-90 °C) at atmospheric pressure."

If there is a risk of exposure to liquefied gases, then consider use of a DuPont™ Tychem® Level A ensemble which has been certified to the optional liquefied gas requirements of NFPA 991. A liquefied gas is defined by NFPA 991 as "a gas that, under its charged pressure, is partially liquid at 70 °F (21 °C)."

Do not knowingly enter an environment in which the concentration of flammable gas/vapor or combustible dust is within flammable or explosive limits when wearing a Tychem® garment, including Tychem® ThermoPro. Retreat immediately if you encounter such an environment.

No Tychem® garment, including Tychem® ThermoPro, is intended for fire-fighting activities, nor for protection from hot liquids, steam, welding, or thermal radiation. Tychem® ThermoPro fabric was tested to EN ISO 11612:2015 (Protective clothing—Clothing to protect against heat and flame—Minimum performance requirements) and was rated as Class D1 for molten aluminum and Class E2 for molten iron.

Do not use Tychem® garments in situations with elevated oxygen concentrations. This includes spills involving liquid oxygen.

### Wearer Must Be Medically Approved

The wearer should be examined and approved by a physician as being physically capable to wear a Tychem® suit.

### Manage and Prevent Heat Stress

Chemical protective clothing interferes with the natural regulation of body temperature. This can lead to a rise in core body temperature and heat stress. The wearer can take steps to try to delay the onset of heat stress. This may include the use of a personal cooling system and/or implementation of a conservative work/rest schedule.

The maximum length of time that a Tychem® garment can be worn depends on such variables as the breathing air supply, ambient conditions, climate inside the suit, physical and psychological condition of the wearer, work rate, and work load. The TLV™ pocket guide from the American Conference of Governmental Industrial Hygienists (ACGIH) provides corrected heat stress limits for some garments. Similar information is available on the federal OSHA web site ([www.OSHA.gov](http://www.OSHA.gov)). The wet bulb globe temperature (WBGT) correction factor for chemical protective garments is at least 50 °F (10 °C) or higher for chemical garments made of impervious film fabrics like Tychem® and covering the entire body (hooded coverall or encapsulating designs).

Be aware of the common symptoms and treatment of heat stress. If you or your co-workers have symptoms of heat stress such as nausea, dizziness, high heart rate, or excessive heat build-up, leave the work area immediately, remove the suit or ensemble as quickly as possible after decontamination and seek professional medical care.

## Chemical Permeation Data

Before using a Tychem® suit for skin protection from possible chemical exposure, review the chemical permeation data provided on DuPont™ SafeSPEC™ ([www.safespec.dupont.com](http://www.safespec.dupont.com)). The reported permeation data is based on performance under controlled laboratory conditions for new fabrics, not complete garments. This data is intended for informational use by persons having technical skill to consider this data along with their specific end-use conditions and hazards, at their own discretion and risk. Anyone intending to use this information should first verify that the garment selected is suitable for the intended use. In many cases, seams, visors, and closures have shorter breakthrough times and higher permeation rates than the base fabric used to assemble the suit.

The chemical permeation barrier performance of a material depends on a number of factors including chemical concentration, temperature, exposure time, and amount of exposure. Due to the large number of variables, it is impossible for all ensemble materials to be tested against all chemicals, all combinations or mixtures, and all temperatures at which the chemicals might be encountered.

No single protective material will protect against all chemicals in all situations. An ideal course of action is to test the primary garment materials against the specific chemical hazard, at the temperature and concentrations to be encountered. If requested, DuPont will provide free swatches of primary garment materials to end users to permit them to conduct their own barrier evaluations. DuPont can also provide a listing of test laboratories which are familiar with permeation barrier test methods.

## Avoid Purposeful Exposure

Good practice is to minimize, as much as possible, continuous exposure to any known hazardous substance.

## Static Electricity

It is possible that Tychem® garments might build and discharge static electricity while being worn, donned, or doffed. Discharges are not normally dangerous except in situations where the generation of an electrical spark could ignite a flammable atmosphere. In the case of explosive or flammable atmospheres, even if appropriate steps have been taken to manage static generation and to dissipate static charges, the risk of severe injury or death remains if an uncontrolled or accidental ignition occurs.

Tychem® ThermoPro models TP198T and TP199T have been tested and certified to NFPA 2112, Standard on Flame-Resistant Garments for Protection of Industrial Personnel Against Flash Fire. However, do not knowingly enter an environment in which the concentration of flammable gas/vapor or combustible dust is within flammable or explosive limits when wearing any Tychem® garment, including Tychem® ThermoPro. Retreat immediately if you encounter such an environment.

## Avoid Exothermic Reactions

Certain chemicals produce a large amount of heat when they contact water. If your garment is heavily contaminated with a water-reactive chemical, there is a possibility that the garment may be damaged during field decontamination with water. Remove the excess water-reactive chemical with dry sand or non-reactive absorbent before using a water decontamination procedure.

## Attached Socks

The socks attached to Tychem® garments are designed to be worn inside outer boots. These socks do not have sufficient durability or slip resistance to be worn as the outermost layer.

## Communications

Use of a respirator with chemical protective garments often hampers clarity of voice communications. Consider using a personal communication system to improve voice clarity. The wearer may also use hand signals to communicate.

## Use of Adhesive Tape to Seal Chemical Garments

If properly done, taping of PPE interfaces may reduce bulk material flow, but cannot be relied on to provide a liquid-tight or vapor-tight seal. Additionally, during an emergency situation it may be difficult to carefully apply such tape. Therefore, taping is primarily viewed as a means to hold PPE items in place e.g. to hold a hood over a respirator face piece, a sleeve over a glove, a pant leg over a boot, or to keep a closure flap closed. Taping does not provide reliable liquid or gas barrier performance.

## WARNINGS

The following warning applies to all Tychem® garments, except for Tychem® ThermoPro full body protection models.

Tychem® ThermoPro full body protection models are designed and tested to help reduce injury during escape from a fire. Tychem® chemical protective garments (except for Tychem® ThermoPro full body protection models) will ignite, melt and continue to burn when exposed to heat and flame and therefore should not be worn around heat, open flames, sparks, or any other possible ignition source or in potentially explosive or flammable environments. Wearing garments made of Nomex® or any other flame-resistant fabric under Tychem® garments, other than Tychem® ThermoPro garments, may not reduce burn injury. Do not wear Tychem® garments, other than Tychem® ThermoPro garments, under a garment made of Nomex® or any other flame resistant fabric, if the potential for fire exists.

Tychem® ThermoPro garments are available in models which offer full body protection or partial body protection. Partial body protection models of Tychem® ThermoPro should only be used in combination with appropriate primary flame resistant garments (such as Nomex® IIIA). Partial body protection models of Tychem® ThermoPro should not be worn alone in areas where flame exposure may occur.

Tychem® 2000 SFR garments provide secondary flame resistance; they must be worn over appropriate primary flame resistant garments (such as Nomex® IIIA). Tychem® 2000 SFR garments should not be worn alone in areas where flame exposure may occur.

Do not knowingly enter an environment in which the concentration of flammable gas/vapor or combustible dust is within flammable or explosive limits when wearing a Tychem® garment, including Tychem® ThermoPro. Retreat immediately if you encounter such an environment.

No Tychem® garment, including Tychem® ThermoPro, is intended for fire-fighting activities, nor for protection from hot liquids, steam, welding, or thermal radiation. Tychem® ThermoPro fabric was tested to EN ISO 11612:2015 (Protective clothing—Clothing to protect against heat and flame—Minimum performance requirements) and was rated as Class D1 for molten aluminum and Class E2 for molten iron.

Tychem® garments are not suitable for use when the concentration of oxygen is elevated.

## **YOUR RESPONSIBILITY AS A USER**

A trained and qualified safety professional must select chemical protective clothing and other PPE and provide user training. It is your responsibility as a user of this garment to determine the level of possible exposure and the proper personal protective equipment needed. It is the responsibility of the garment wearer and the wearer's employer to ensure that the garment is suitable for use in the environment.

It is your responsibility as a user to select garments which are appropriate for each intended use and which meet all specified government and industry standards. Tychem® garments are intended to help reduce the potential for injury, but no protective garment alone can eliminate all risk of injury. Protective garments must be used in conjunction with general safety practices.

Tychem® garments are designed for limited use. It is the wearer's responsibility to inspect garments before use and periodically to ensure that all components, including fabric, valves, visors, gloves, zippers, seams, and interfaces, are in good working condition and provide adequate protection for the operation and chemicals to be encountered. Level A garments must be pressure tested prior to use. Failure to fully inspect and test garments before use may result in serious injury or death to the wearer. Never wear garments that have not been fully inspected. Immediately remove from service any garment which does not pass inspection. Never wear a garment that is contaminated, altered or damaged.

If the Tychem® garment is damaged during use, retreat immediately to a safe environment, thoroughly decontaminate the garment, remove the garment, and then dispose of it in a safe manner.

## **WARRANTY AND DISCLAIMERS**

(Applies to Tychem® non-encapsulated garments)

DuPont makes no guarantee of results and assumes no obligation or liability in connection with the use of DuPont garments and accessories. It is user's responsibility to determine the level of hazards and the proper personal protective equipment needed.

DuPont warrants to the purchaser/end user only for a period of 90 days from the date the Tychem® non-encapsulated garments or accessories were shipped that the non-encapsulated Tychem® garments or accessories are free of defects in materials and workmanship. Since conditions of use are outside DuPont's control, DUPONT MAKE NO OTHER WARRANTIES OF ANY KIND, EXPRESSED OR IMPLIED, INCLUDING, WITHOUT LIMITATION, NO WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE and assume no liability in connection with any use of the DuPont garment and accessories. This warranty is void in the event any party including purchaser/end user modifies the garment or accessory in any way.

The sole and exclusive remedy for all purchasers and/or end users for any and all claims, losses, injuries or damages of any kind relating to or arising from DuPont garments and accessories, shall be the refund of the purchase price or the replacement or repair of any garment or accessory found to contain a defect in materials or workmanship upon inspection by DuPont. Only DuPont shall determine the form of remedy (repair, replacement, or refund) for items containing a defect in materials or workmanship. No warranty claim shall be honored unless received by DuPont within 90 days from the date the non-encapsulated Tychem® garment or accessory was shipped.

IN NO EVENT SHALL DUPONT BE LIABLE FOR ANY SPECIAL, INCIDENTAL, INDIRECT, PUNITIVE OR CONSEQUENTIAL DAMAGES, WHETHER ARISING FROM CONTRACT, TORT, DEFECTS, OR ANY OTHER CAUSE OR THEORY.

Product safety information is available upon request. This information corresponds to our current knowledge on the subject. It is offered solely to provide possible suggestions for your own experimentations. It is not intended, however, to substitute for any testing you may need to conduct to determine for yourself the suitability of our products for your particular purposes. It is the user's responsibility to determine the level of risk and the proper protective equipment needed for the user's particular purposes. This information may be subject to revision as new knowledge and experience becomes available. Since we cannot anticipate all variations in actual end-use conditions, DUPONT MAKES NO WARRANTIES AND ASSUMES NO LIABILITY IN CONNECTION WITH ANY USE OF THIS INFORMATION. Nothing in this publication is to be considered as a license to operate under or a recommendation to infringe any trademark or patent right.

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**PROTECTIVE GARMENT SIZING CHART**

