



# Middle East Respiratory Syndrome (MERS)

## Technical Bulletin

### What is MERS?

Middle East Respiratory Syndrome (MERS) is an illness caused by a coronavirus called Middle East Respiratory Syndrome Coronavirus (MERS-CoV). Coronaviruses are a large family of viruses that can cause diseases ranging from the common cold to Severe Acute Respiratory Syndrome (SARS).

MERS affects the respiratory system, typically resulting in severe acute respiratory illness displaying symptoms of fever, cough and shortness of breath. About 30%-40% of patients reported with MERS have died.<sup>1</sup> MERS-CoV was first reported in 2012 in Saudi Arabia.

Currently, no vaccine or specific treatment is available to cure MERS. Treatment for infected individuals is supportive and based on the patient's clinical condition.

### How is MERS spread?

Camels are suspected to be a major reservoir host for MERS-CoV and an animal source of MERS infection in humans; however, the exact role of camels in transmission of the virus to humans and the exact route(s) of transmission are unknown.

The majority of human cases of MERS have been attributed to human-to-human infections. MERS-CoV is believed to spread from an infected person's respiratory secretions, although the specific ways

the virus spreads are not currently well understood. MERS-CoV does not seem to pass easily from person to person unless there is close contact. The virus has spread from sick people to others through close contact, such as unprotected caring for or living with an infected person. Infected people have spread MERS-CoV to others in healthcare settings, such as hospitals.

### Who needs to be protected?

As a general precaution, individuals visiting farms, markets, barns or other places where camels and other animals are present should practice general hygiene measures, including regular hand washing before and after touching animals. Additionally, contact with sick animals should be avoided.

Transmission of MERS-CoV has occurred in healthcare facilities in several countries, including from patients to healthcare providers and between patients in a healthcare setting before the virus was diagnosed. The symptoms and other clinical features of MERS are non-specific making it difficult to identify patients with MERS-CoV early or without testing. Infection prevention and control measures are critical to prevent the spread of MERS-CoV in healthcare facilities. Healthcare workers should be educated and trained in infection prevention and control, and be diligent in practicing these measures.

1. CDC Fact Sheet, "Information about Middle East Respiratory Syndrome (MERS)"



## What protective apparel is available?

The Centers for Disease Control (CDC) and World Health Organization (WHO) provide direction on infection prevention and control procedures related to MERS. Both provide guidance to healthcare professionals for the use of personal protective equipment (PPE) for contact with patients with known or suspected cases of MERS. Both suggest the use of clean, disposable, long-sleeved gowns.

DuPont Personal Protection can provide a wide range of protective garments and related specifications, to meet a broad spectrum of needs.



Both DuPont™ Tyvek® and DuPont™ Tychem® QC are available in disposable apron and coverall designs, as well as sleeves. Tychem® QC offers the added protection of a polyethylene coating on Tyvek® fabric. A Tychem® QC apron can provide a blood-borne pathogen impermeable barrier over disposable coveralls or surgical gowns.

Tychem® QC fabric and its taped seams have been tested and have passed the requirements of ASTM Standards F1670 and ASTM F1671.

This information is based upon technical data that DuPont believes to be reliable. It is subject to revision as additional knowledge and experience are gained. DuPont makes no guarantee of results and assumes no obligations or liability in connection with this information. It is the user's responsibility to determine the level of toxicity and the proper personal protective equipment needed. The information set forth herein reflects laboratory performance of fabrics, not complete garments, under controlled conditions. It is intended for information use by persons having technical skill for evaluation under their specific end-use conditions, 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 and closures have shorter breakthrough times and higher permeation rates than the fabric. If fabric becomes torn, abraded or punctured, end user should discontinue use of garment to avoid compromising the barrier protection. SINCE CONDITIONS OF USE ARE OUTSIDE OUR CONTROL, WE MAKE NO WARRANTIES, 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 THIS INFORMATION. This information is not intended as a license to operate under or a recommendation to infringe any patent, trademark or technical information of DuPont or others covering any material or its use.

During high-contact patient activities, especially cleaning, disinfecting and decontaminating, where exposure to moderate to large volumes of bodily fluids is anticipated, a taped seam Tychem® QC garment may be appropriate to reduce the risk of bodily fluid contact.

- ASTM F1670 – Standard Test Method for Resistance of Materials Used in Protective Clothing to Penetration by Synthetic Blood
- ASTM F1671 – Standard Test Method for Resistance of Materials Used in Protective Clothing to Penetration by Blood-borne Pathogens Using Phi-X174 Bacteriophage Penetration as a Test System

For details, the standard test methods are available for purchase at:

ASTM F1670: <http://www.astm.org/Standards/F1670.htm>

ASTM F1671: <http://www.astm.org/Standards/F1671.htm>

### References:

Centers for Disease Control (CDC)

<http://www.cdc.gov/coronavirus/mers/index.html>

World Health Organization (WHO)

<http://www.who.int/emergencies/mers-cov/en/>



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