

SafeCoat® FR31

DESCRIPTION

This product is highly effective, economical and environmentally friendly fire retardant treatment for fabrics of most types. It can be used as a fire retardant and impregnating agent on practically all water absorbent materials. **SafeCoat® FR31** can be applied by spraying, padding or immersion, or incorporated directly into a product. The method of application will depend on the type of material and structure of the fiber.

USES

Applications by Industry:

Convention/Hospitality; Furniture; Carpet; Entertainment; Residences; Trade Shows/Exhibitions/Fairs; Senior Citizen Homes; Nursing Homes; Military; Mining; Retail; Pulp and Paper; Libraries; Theaters and Museums; Public Office Buildings; Long-Term Care Facilities; Automobile; Recreation Complexes; Publishing; Food Service; Government; Hospitals & Clinics; Hotels & Convention Centers; and other places of public assembly which are required to be furnished with fire resistant materials to protect the public, as well as property, against accidental ignition or arson.

Applications by Product Group:

Textiles: Lab Coats; Coveralls; Velour; Drapery; Curtains; Carpets; Tents*; Work Clothing; Wall Coverings; Cotton and Canvas; Linen (Table Cloths); Upholstery. Paper and Cellulosics: Trade Show Displays; Decorations; Packaging; Cardboard; Books and Documents; Crepe Paper.

*The water-soluble properties of **SafeCoat® FR31 Fabric Treatment** limits these to temporary applications which require re-application following laundering or when exposed to rain or other water ingress.

FEATURES

- Is an aqueous solution of inorganic salts. It is colorless and has a slight odor of ammonia in solution but is odorless when dry.
- Is chemically neutral or slightly alkaline with a pH of 7.0 to 8.0. Its primary role is to act as a flame retardant.
- Does not substantially affect the appearance or feel of the fabric if properly applied. The fabric remains soft and pliable.
- Water soluble so it can be washed out of both textiles and materials. Re-treat after laundering.
- Is approved in ready to use, liquid form.

TECHNICAL DATA and PROPERTIES

Appearance	Colorless free flowing liquid
Odor	Slight ammonia odor
Specific Gravity	8.65 lbs/USG or 1.04 g/mL
Solids by Weight	20%
pH	7.0-8.0
Dry Time	Dependent upon fabric type and thickness
Coverage	1:1 (one pound of solution for one pound of fabric) 1 gallon of SafeCoat® FR31 weighs 10 lbs.
Boiling Point	Not available
Storage Limits	Store in a cool dry location away from direct sunlight. Keep from freezing, above 32° F (0°C)
Packaging	Available in, 1-gallon US jug, five-gallon US Pail, or 55-gallon US drum

Note: SafeCoat® FR31 Fire Retardant Fabric Treatment is an aqueous solution of inorganic salts, chemically neutral or slightly alkaline with a pH value of 7.0-8.0. It has very low toxicology, but should be kept out of the reach of children. Read the SDS, available on request, for detailed precautions.

APPLICATION INSTRUCTIONS

Typical Application

- **SafeCoat® FR31 Fire Retardant Fabric Treatment** can be applied by spraying, coating or immersing a fabric at any point in the manufacturing process. Do not dilute or mix with other products.
- Check the fabric for color-fastness before starting the treatment.
- Distribute solution evenly across the entire surface, ensuring that solution does not flow or drip to the extreme, whenever possible.
- Dry on a horizontal drying rack, at moderate temperature (between 70° and 175° F) for optimal results.
- Tumble dry fabric in a warm dryer, (maximum temperature should not exceed 175° F).
- Iron fabric using a warm iron (maximum temperature 200° F). Iron a small area first, to ensure the color is not affected.
- To spray, use a hand-held or back pack pressurized spray container with an atomizer nozzle. Filter the solution into the tank to keep out any solids that may plug the nozzle. With daily use, the sprayer must be flushed out with clean warm water.

Coverage rate:

The required quantity depends on the absorbency of the material, its inherent flammability and its overall weight. As a rough guide:

The maximum amount of **SafeCoat® FR31 Fire Retardant Fabric Treatment** required is proportional to the original weight of the material to be treated (80 to 100%); i.e., if the dry fabric starts out weighing 1 kg, then it should pick up between 0.8 to 1 kg of solution during treatment and retain an additional net added weight of 73 g to 91 g after drying.

Fabric Cleaning and Care Instructions:

Detergents and water or shampooing (i.e.: of drapes, carpets, etc.) will remove **SafeCoat® FR31 Fire Retardant Fabric Treatment** and re-application will be necessary. Re-treat after laundering.

SAFETY PRECAUTIONS

SafeCoat® FR31 is environmentally responsible and causes little to no harm to the environment. Avoid contact with eyes. Personal protective clothing should be used to protect eyes, lungs and skin from prolonged contact. Clean up with soap and water. Clean spray equipment with water. **Keep out of reach of children. Do not take internally.**

Hazard Class

SafeCoat® FR31 Fire Retardant Fabric Treatment is not subject to WHMIS Regulations, nor is it regulated by Transportation of Dangerous Goods.

TEST RESULTS

SafeCoat® FR31 Fire Retardant Fabric Treatment is tested under **CAN/ULC S109-14/CGSB 4.2 27.1 MS**. The results show "a high degree of flame resistance" on fabrics such as:

- Polyester fabrics - 100%
- Cotton - 100%
- Polyester/Cotton blend - 65/35%

Each of these fabrics is a medium weight (drapery or tablecloth) fabric.

ACCEPTANCE CRITERIA

A sample will meet the requirements of CAN/ULC S109 if the following criteria are met: In 2020, Intertek tested samples of 100% cotton fabric treated with SafeCoat® FR-31 Fabric Treatment. The samples were tested in accordance with CAN/ULC S109-14, Standard for Flame Tests of Flame-Resistant Fabrics and Films.

Small Flame Samples

- Portions or residues from the test specimen which break or drip from the sample during the test shall not continue to burn for more than two seconds on the floor of the test apparatus.
- The vertical spread of flame and smouldering combustion shall not exceed 190mm on any one specimen and shall not exceed 165mm on an average of more than 2 seconds.

Observations: No portions of or residues from the 10 test specimens fell and burned on the floor of the test apparatus for more than 2 seconds.

CONCLUSION: The submitted samples of 100% cotton fabric treated with SafeCoat® FR-31 Fabric Treatment submitted by Quantum Technical Services Ltd. therefore, meet the requirements of CAN/ULC-S109-14, Standard for Flame Tests of Flame-Resistant Fabrics and Films, small flame test.

PRODUCT WARRANTY

Recommendations for the use of our products are based on tests carried out at government approved labs. Manufacturer and seller are not responsible for results where the product is used under conditions beyond our control. The purchaser of this product must rely on his own judgement in determining suitability for his purpose, and in applying directions as to handling and use. Quantum Chemical makes no warranty, expressed or implied, except that if this product proves on inspection to be defective, Quantum Chemical will replace such quantity of the product proven to be defective or refund the purchase price of defective product. Labour costs and other consequential damages are hereby excluded. No representative or purported agent of Quantum Chemical has the authority to change this warranty. The information contained herein is subject to change without notice. If in doubt, contact your Quantum Chemical Representative for current Technical Data Sheets (TDS).