

vonRoll heat shrink films

IRRATHENE® 210

- ▶ High Strength
- ▶ High dielectric strength
- ▶ Low dielectric constant
- ▶ Low dissipation factor
- ▶ Excellent chemical and moisture resistance
- ▶ Sealable

General description

IRRATHENE® 210 polyethylene film offers excellent thermal stability and resistance to stress cracking. The encapsulation grade is radiation cross-linked, oriented, low density polyethylene film. It has high dielectric strength, low dielectric constant, and greater strength than general purpose IRRATHENE® 201 or 202. IRRATHENE® 210 film has high longitudinal shrinkage when heated which permits it to be used to encapsulate objects with a tight impervious wrap. IRRATHENE® 210 film is non-melting, resistant to environmental stress cracking, and is unaffected electrically by moisture.

Application

IRRATHENE® 210 film is suggested for use in insulating motor and generator coils and in laminated cable where its strength permits machine taping, and ability to encapsulate objects with a tight impervious wrap. Since IRRATHENE® 210 is a translucent film containing an antioxidant to suppress oxidation at elevated temperatures, it can be used continuously at Class A temperatures (105°C) with overload protection to 200°C for short intervals. It is suitable for wrapping small transformer and special electrical and electronic coils where excellent dielectric properties over a wide temperature and frequency range are required.

Standards

The properties shown above are typical values only, and should not be used as a basis for preparing specifications. Contact our Customer Service department, (518) 344-7100 for assistance in preparation of specifications for your specific system application.

Processing

IRRATHENE® 210 tapes may be applied by either hand or machine taping. In addition, sealed impervious systems may be obtained by heating wrapped structures to 212 - 230°F (100 - 110°C) to shrink the IRRATHENE® tape around the object, followed by heating to 275 - 302°F (135 - 150°C). The lower temperature shrinks the IRRATHENE® and allows entrapped air to escape, while sealing occurs at the higher temperature.

Health and safety

Material Safety Data Sheets defining the known hazards and describing safety precautions appropriate for this product are available upon request from Von Roll USA, Inc., 200 Von Roll Drive, Schenectady, New York 12306 (518) 344-7100. Similar information sheets for solvents and other chemicals used with this product may be obtained from the appropriate supplier and used accordingly.

Shelf life

IRRATHENE® 210 tape has exhibited no shelf like limitations for a period of one year when stored under normal conditions; 77°F (25°C) and 50% relative humidity. IRRATHENE® 210 should be protected from sunlight.

Order Data

This product is available from Von Roll USA, Inc. or from authorized Von Roll distributors. For the name of your distributor or for more information on this product, contact our Customer Service department, (518) 344-7100.

Packaging

IRRATHENE® 210 tape are available as slit tape, ½ inch to 18 inches (12.7 - 457.2 mm) in width and thicknesses of 4 mil and 8 mil (0.10 - 0.20).

Von Roll USA, Inc.
Schenectady, NY 12306, USA
www.vonroll.com

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Product Data

Color	White
Sealable	Yes
Oxidation Inhibited	Yes
Specific Gravity	0.92
Water Absorption	Negligible
Chemical Resistance	Excellent
Solvent Resistance	Good below 60°C
Weather Resistance	Protect from sunlight
Continuous Operating Temperature limit	105°C

Performance Characteristics

Typical Electrical Properties

	25°C	100°C
Dielectric Strength, ASTM D149		
Short Time; 5 mil film, volts	2500	1800
Step by step, 5 mil film, volts	1800	N/A
Dissipation Factor, ASTM D150, 60 Hz; %	0.05	0.05
Dielectric Constant, ASTM D149; 60 Hz	2.3	2.1
Volume Resistivity, ASTM D257; ohm-cm	10 ¹⁶	10 ¹⁶
Resistance to Surface Arcing (dust creepage test), hours	200	N/A
Effect of Moisture on Properties	Negligible	Negligible

Typical Mechanical Properties

	0.004 inch	0.008 inch
Breaking Strength, 73°F (23°C), minimum lb/in width	12	24
Elongation at break, ASTM D-882; at 73°F (23 °C), %	400	475
Shrinkage, 300°F (150°C), lengthwise; %	40 -50	40 - 50
Shrinkage Temperature Range, °C	80 - 100	80 - 100
Coverage; yd ² /lb (m ² /kg)	5.6 (10.3)	2.3 (4.2)

The product properties set forth in this data sheet are based on the results of testing of typical material produced by the affiliated companies of Von Roll Holding Ltd. (underneath referred as Von Roll). Some variation in product properties is typical. Comments or suggestions relating to any subject other than product properties are offered only to call the end-user's or other person's attention to considerations which may be relevant in the independent determination of the use and/or manner of use of product. Von Roll does not claim or warrant that the use of its product will have the results described in this data sheet or that the information provided is complete, accurate or useful. The user should test the product to determine its properties and its suitability for the intended use. Von Roll expressly disclaims any liability for any damage, harm, injury, cost or expense to any person resulting directly or indirectly from that person's reliance on any information contained in this data sheet. Nothing contained in this data sheet constitutes representation or warranty as to any matter whatsoever. Von Roll makes no warranties whatsoever in this data sheet, expressed or implied, including any implied warranty or fitness for a particular use or purpose. Von Roll shall in no event be liable for incidental, exemplary, punitive or consequential damages.

