



RHOPLEX™ HA-8
Versatile, Soft, Acrylic Binder

For Nonwovens

Regional Product Availability

North America

Description

RHOPLEX HA-8 is a versatile, self-crosslinking, acrylic emulsion recommended for bonding nonwovens. This water-based, hydrophilic binder combines a soft hand with both lotion and wet tensile strengths. Additional characteristics include ease of formulation, excellent runnability, and durability to washing and drycleaning. It is recommended for both rayon and polyester webs including durable and disposable nonwoven applications such as hospital-medical end uses, personal hygiene, carrier fabrics, interlinings, and household furnishings.

Benefits

In summary, RHOPLEX HA-8 has:

- Excellent wet tensile strength
- Good lotion tensile strength
- Soft hand
- Excellent durability to washing
- Good durability to drycleaning
- Hydrophilicity
- Excellent runnability

Performance Features

RHOPLEX HA-8 combines a soft hand, with tensile strength and durability. The following are typical laboratory test results for RHOPLEX HA-8.

Performance on Polyester (1 oz/sq yd) 75/25 Fiber/Binder Ratio	
Tensile Strength, g/inch width (CMD)	RHOPLEX™ HA-8
Dry	955
Water wet	660
Isopropanol wet	400

Performance on Wood Pulp (Whatman #4 Filter Paper) 80/20 Fiber/Binder Ratio	
Tensile Strength, g/inch width (CMD)	RHOPLEX™ HA-8
Dry	6200
Water wet	3600
Isopropanol wet	3300

Formulation

Crosslinking

RHOPLEX™ HA-8 is a self-crosslinking emulsion which does not need an external crosslinker to achieve durability to washing and drycleaning. Self-reactive sites are built into this latex polymer which crosslink with a combination of time and heat.

Catalyst

The time and temperature required to dry and cure nonwovens bonded with RHOPLEX HA-8 depend on many factors. Fiber type, formulation, method of application and drying and curing equipment are some of the variables that will affect the rate of crosslinking (i.e., cure). The actual rate of crosslinking is best determined under actual production conditions.

In applications requiring a faster rate of crosslinking, or where less than optimum curing conditions exist, the addition of an acid or latent acid catalyst will increase the rate of crosslinking of RHOPLEX HA-8. The following catalysts are recommended with this binder:

Catalyst	Concentration (solids on emulsion solids)	Comment
Oxalic acid	0.5%	Add as a 10% solution
Ammonium chloride	1.5%	Add as a 25% solution

Defoamer

If needed, a general purpose defoamer such as Foamaster DF-160L is recommended with RHOPLEX HA-8. This product should be used at a concentration of 0.05 to 0.1% (product as supplied) on the total weight of the formulation. Prior to use, any defoamer should be pre-emulsified with at least an equal weight of warm water and added to the emulsion, under agitation, before other compounding ingredients.

Surfactant

A nonionic surfactant, such as TRITON™ X-114, is recommended in the formulation to achieve better wetting of the fibers. This surfactant should be used at a starting level of 0.5 percent solids on polymer solids and diluted with at least 3 times its weight of warm water before being added. An anionic surfactant, such as TRITON GR-5, should be used where rewetting properties in the end product are desirable. The same solids level and predilution as with TRITON X-114 are recommended.

pH

To maximize emulsion shear stability, the pH of the bath should be adjusted to 8.0–8.5 with a volatile base such as ammonium hydroxide.

Starting Point Formulations

The following formulation is offered as starting point and can be modified for your application. For specific applications, recommendations will be provided upon request.

General Purpose Disposable Rayon Nonwoven		
Ingredients in Order of Addition	Parts Product by Weight (as supplied)	Parts Product on a Solids Basis
Water	66.64	—
Foamaster DF-160 L	0.10	0.10
Warm water premix	0.10	—
TRITON™ X-114	0.07	0.07
Warm water premix	0.21	—
RHOPLEX™ NW-1402	32.00	14.55
Ammonium chloride (25%)	0.88	0.22
Ammonium hydroxide	to pH 8.0–8.5	
Total	100.00	14.94

Typical Properties

These properties are typical but should NOT be considered specifications.

Appearance	Milky-white liquid
Type	Self-crosslinking acrylic
Ionic Charge	Nonionic
Solids Content, %	45.5
pH (as packed)	3.0
Brookfield Viscosity at 25°C, cP (#1 spindle, 30 rpm)	400
Glass Transition Temperature, T _g , °C (DSC method)	-10
Density, 25°C	8.7 lb/US gal (1.04 kg/l)

Handling Precautions

Before using this product, consult the Material Safety Data Sheet (MSDS)/Safety Data Sheet (SDS) for details on product hazards, recommended handling precautions and product storage.

CAUTION! Keep combustible and/or flammable products and their vapors away from heat, sparks, flames and other sources of ignition including static discharge. Processing or operating at temperatures near or above product flashpoint may pose a fire hazard. Use appropriate grounding and bonding techniques to manage static discharge hazards.

CAUTION! Failure to maintain proper volume level when using immersion heaters can expose tank and solution to excessive heat resulting in a possible combustion hazard, particularly when plastic tanks are used.

Storage

Store products in tightly closed original containers at temperatures recommended on the product label.

Disposal

Dispose in accordance with all local, state (provincial) and federal regulations. Empty containers may contain hazardous residues. This material and its container must be disposed in a safe and legal manner.

It is the user's responsibility to verify that treatment and disposal procedures comply with local, state (provincial) and federal regulations. Contact your Dow Coating Materials Technical Representative for more information.

Product Stewardship

Dow has a fundamental concern for all who make, distribute, and use its products, and for the environment in which we live. This concern is the basis for our product stewardship philosophy by which we assess the safety, health, and environmental information on our products and then take appropriate steps to protect employee and public health and our environment. The success of our product stewardship program rests with each and every individual involved with Dow products—from the initial concept and research, to manufacture, use, sale, disposal, and recycle of each product.

Customer Notice

Dow strongly encourages its customers to review both their manufacturing processes and their applications of Dow products from the standpoint of human health and environmental quality to ensure that Dow products are not used in ways for which they are not intended or tested. Dow personnel are available to answer your questions and to provide reasonable technical support. Dow product literature, including safety data sheets, should be consulted prior to use of Dow products. Current safety data sheets are available from Dow. The properties relating to the products herein are typical, but should not be considered specifications

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