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Technical Data Sheet

RUBINATE® 1790 MDI

Low Functionality Diphenylmethane Diisocyanate Prepolymer

DESCRIPTION

RUBINATE 1790 MDI Isocyanate is a member of the Low Functionality Prepolymer isocyanate family. These materials are produced from the reaction of a standard MDI material with selected polyether polyols to provide certain characteristics for use in the production of two-component polyurethane products.

RUBINATE 1790 MDI is an all-purpose 4,4' MDI based prepolymer.

Typical Properties	
Color	Pale Yellow Liquid
Isocyanate Equivalent Weight	181
NCO content, %	23.2
Viscosity at 77°F (25°C), cps	1050
Specific Gravity at 77°F (25°C)	1.19
Flash Point, (SetaFlash Closed Cup) °C (°F)	219 (426)
Vapor Pressure at 77°F (25°C) (mm Hg)	$< 10^{-5}$
Functionality	2.01
Recommend Storage Temperature	70-95°F (21-35°C)
Shelf Life	6 Months

APPLICATIONS

RUBINATE 1790 MDI is used in the manufacture of high performance polyurethane materials including RIM-processed and cast elastomers, spray coatings, adhesives and sealants.

NOTE: Products made with RUBINATE 1790 MDI will yellow with exposure to UV light (including sunlight). Users should make their own tests to determine the suitability of this product for their purposes.

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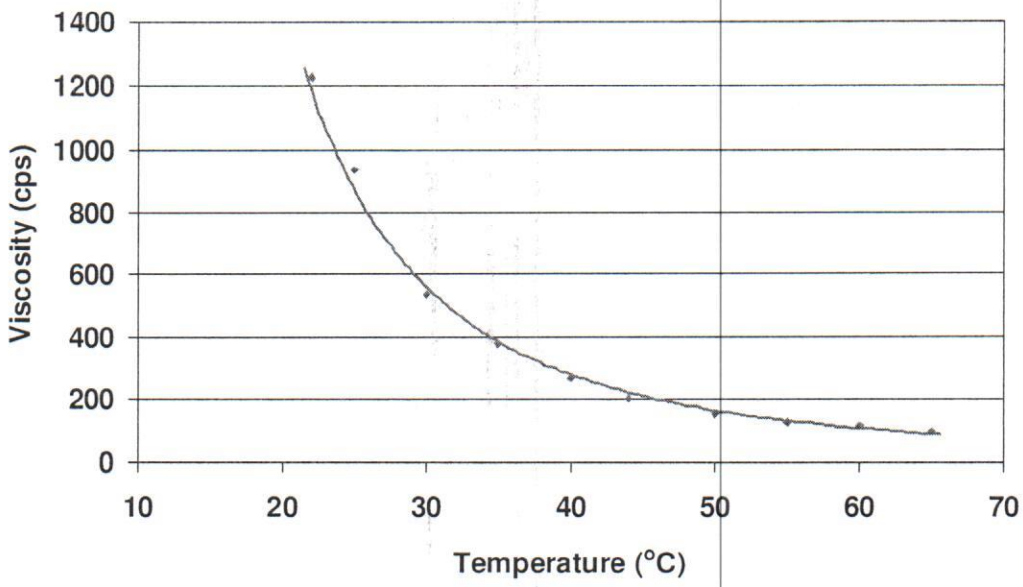
VISCOSITY PROFILE



HANDLING AND STORAGE

The reaction of isocyanates with water leads to the formation of insoluble ureas and carbon dioxide gas which can result in pressure build-up inside closed containers. Therefore, extreme care must be taken to ensure containers used for RUBINATE 1790 MDI remain dry. Containers that have become contaminated with moisture should not be subsequently sealed; otherwise a hazardous increase in pressure may result.

Freshly manufactured RUBINATE 1790 MDI is a pale yellow liquid. Sedimentation is usually due to contamination from atmospheric moisture or to dimer formation. Reaction from atmospheric moisture can be prevented by storing RUBINATE 1790 MDI in carefully sealed containers or under a dry nitrogen atmosphere. During handling, RUBINATE 1790 MDI must also be protected from atmospheric moisture and water ingress, and containers must be carefully resealed after each sampling.

A small amount of finely divided insoluble solid in the liquid product does not usually cause difficulties in handling or product performance. However, if necessary, the liquid product may be filtered through a suitable in-line filter. It is suggested that the filter vessel be of stainless steel with a suitable polypropylene filter bag. The lines should be heated and blown clear with nitrogen after use.

RUBINATE 1790 MDI is also available in 55-gallon drums. If drums have been exposed to temperatures below the recommended storage temperatures for more than a few hours, the material may increase in viscosity. If this occurs, the product may be heated to room temperature to reduce viscosity.

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HEATING AND MELTING

MDI variants may require heating to 70-95°F (21-35°C), their normal operating temperatures.

Certain variants must be heated to 158-174°F (70-80°C) if they have become chilled and crystals have formed. Heating and melting should be carried out with extreme caution. Heating and melting are usually performed in one or several ways:

Hot Air Oven or Chamber: Drums are heated by hot air using drum rollers to reduce heating time. Drums must remain sealed while heating. For pure MDI, heating must be rapid to avoid deterioration of the product. Care must be taken so that the drum is not damaged in order to maintain its integrity during the melting process.

Water Baths or Steam Chests: Only unopened containers should be treated with ambient steam or in water baths. Take extreme care to ensure that water and water vapor do not enter the drum. To do this, tighten the bung and apply dust caps. Failure to do so may result in a build-up of pressure in the drum due to vapor contamination.

NEVER heat MDI by open flames, hot plates or any other method of direct heating.

No matter which method you use, you must carefully inspect drums before heating to ensure they are not damaged. When liquid MDI is heated, MDI vapor in the air increases. Vapor also increases when the drum is opened, and during open pouring. Regular monitoring is important to assess airborne levels.

Drums should be stored at temperatures of 70-90°F (21-35°C). After use, empty containers should not be disposed of until all hazardous residue has been removed. Remove container from work area, preferably outdoors, or in a well ventilated area. Fill container with decontamination solution containing 3-8% ammonia and 0.2-0.5% detergent and allow to stand for 48 hours. Do not seal or otherwise close bungs in container. After draining the container, puncture or crush it in accordance with waste disposal regulations.

REACTIVITY HAZARD

RUBINATE 1790 MDI is an organic isocyanate and, as such, requires care in handling because it reacts with water and organic compounds containing active hydrogen groups. Because the reaction of RUBINATE 1790 MDI with water produces carbon dioxide gas, containers that have become contaminated with moisture should not be subsequently sealed; otherwise, pressure build-up will result.

ATTENTION

This product is sold solely for use by industrial institutions. Please refer to the Material Safety Data Sheet (MSDS) regarding regulatory compliance, safety, hazards, spill procedures and disposal of this product.

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For Your Protection

HEALTH AND SAFETY

The Safety and Health information in this data sheet does not contain sufficient detail for safe handling in all cases. For detailed safety and health information refer to the ***Material Safety Data Sheet*** *for this product.*

EMERGENCY CALLS: Huntsman Emergency Response Center: 800-328-8501, 409-722-8381 / CHEMTREC - Spills, Leak, Fire 800-424-9300 (in USA and Canada)

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