



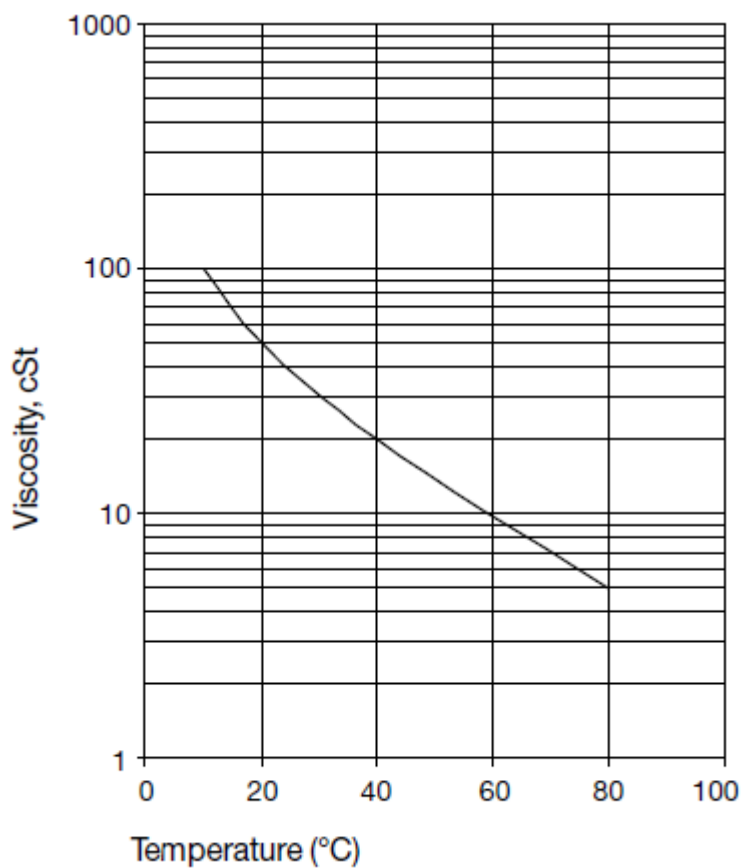
SPECFLEX NS 540 Isocyanate

Description

SPECFLEX™ NS 540 isocyanate is a light coloured, low viscosity liquid Diphenylmethane Diisocyanate (MDI), with an average functionality of 2.2-2.3 and an isocyanate content of 32%.

SPECFLEX™ NS 540 isocyanate has been developed to produce flexible acoustic foams, which have excellent properties for the manufacture of automotive moulded sound insulation parts.

Viscosity vs. Temperature



Typical Component Properties

	Units	Values	Test Method
Functionality		2.2-2.3	
Isocyanate Equivalent	g/equiv.	129.0-134.0	ASTM D5155
NCO Content	%	31.36-32.57	ASTM D5155
Viscosity @ 25°C	mPa*s	38-60	ASTM D4889
Acidity, as HCL	ppm	130 - 170	DOWM 100488
Physical state @ 25°C		Liquid	
Colour		Light Brown	
Density @ 25°C		1.22	
Vapour Pressure @ 25°C	mm Hg	<10 ⁻⁵	
Boiling Point	°C	200 @ 5mm Hg	
Flash Point (Pensky Martens Closed Cup)	°C	>200	ASTM D93

These are typical values and should not be construed as specifications.

Handling and Storage

	Units	Limits
Storage temperature ⁽¹⁾	°C	25-35
Storage stability / Shelf life ⁽¹⁾	months	6

1. Stored in the original sealed containers at the recommended temperature. Note: at temperature below 20°C this product may become turbid by partial crystallisation and/or dimer formation. Gently heating at temperature between 40°C and 60°C may eliminate the problem. However, at high dimer content, dimer may not be soluble anymore into the isocyanate and the product may stay cloudy. In this case, product should be considered as destroyed for some critical applications.

Handling and Storage

Store in a dry place at 25 to 35°C

Keep container closed as moisture contamination will induce an exothermic reaction with evolution of CO₂ which may cause dangerous pressure generation.

Caution

Polyurethanes or polyisocyanurates produced from this product may present a fire risk in certain applications if exposed to fire and/or excessive heat, e.g. welding and cutting torches, in the presence of oxygen or air.

Drum Storage

SPECFLEX NS 540 will react when exposed to atmospheric moisture. Where drums are to be partially emptied, it is recommended that a calcium chloride-filled dryer tube be used in the air bleed opening. Should SPECFLEX NS 540 be exposed to moisture, a skin will develop on its surface similar to that found on paint. Normally, however, the remaining liquid SPECFLEX NS 540 under the skin may be used without formulation changes.

Due to an exponential change in viscosity at low temperatures, SPECFLEX NS 540 should be stored at temperatures above 25°C to facilitate pouring. At temperatures below 25°C, a partial crystallisation of SPECFLEX NS 540 may occur. The crystallised material can be remelted at 60°C to 70°C. For detailed procedures consult your nearest Dow sales office.

Bulk Storage

Construction material for tanks, lines, pumps, etc. can be mild steel for storage at temperatures up to 35°C. Series 300 stainless steel or stainless cladding is recommended for storage at temperatures above 35°C. Transfer pumps should contain a stainless steel shaft with mechanical seals. Packed glands can leak sufficiently to cause reaction with moisture and subsequent scoring of the pump shaft by the formed ureas. Only low

temperature heating media should be used in tank jackets or coils unless adequate circulation or agitation of SPECFLEX NS 540 is maintained. A slight positive pressure using dry inert gas (-40 °C dew point) must be maintained over stored SPECFLEX NS 540 to prevent solids formation that can occur in the presence of atmospheric moisture.

Toxicity

Harmful by inhalation. Irritating to eyes, respiratory system and skin. May cause sensitisation by inhalation and skin contact. Avoid breathing vapour or mist. Use with adequate ventilation. Avoid contact with eyes, skin, or clothing. Always wear chemical goggles. Wear a mask or respirator of a type approved by local government and public bodies. If handled indoors, provide mechanical exhaust ventilation. During spray operations, airline masks or positive pressure hose masks should be worn because of the high concentration of isocyanate mist in the atmosphere. OELs (Occupational Exposure Limits) have been set for MDI in most countries. The atmospheric levels should be maintained below the exposure guidelines. Wear protective clothing, overalls, boots, apron and gloves.

Fire

Isocyanates will burn but do not ignite easily. In the event of a fire, toxic vapours and decomposed material are likely to be present. Suitable fire extinguishing agents include water fog, carbon dioxide, or dry chemical powder. All fire fighters should be equipped with protective clothing and a positive pressure, self-contained breathing apparatus. Drums of isocyanate involved in a fire should be sprayed with water to minimise the risk of rupture. However, water contamination in a closed container or a confined area is to be avoided due to exothermic CO₂ evolution upon water contamination.

First Aid Procedure

Inhalation: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, oxygen should be administered by qualified personnel. Call a physician or transport to a medical facility. Obtain medical attention immediately. Effects may be delayed. **Skin contact:** Remove material from skin immediately by washing with soap and plenty of water (warm water is preferable if readily available). Remove contaminated clothing and shoes while washing. Seek prompt medical attention if irritation persists.

Eye contact: Flush eyes with water for at least 15 minutes. Get prompt medical attention.

Ingestion: Do not induce vomiting if swallowed. Immediately call a physician who will decide on need and method for emptying the stomach.

Product Stewardship

The Dow Chemical Company and its subsidiaries ("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.

Safety Considerations

Material Safety Data (MSD) sheets are available from The Dow Chemical Company. MSD sheets are provided to help customers satisfy their own handling, safety and disposal needs and those that may be required by locally applicable health and safety regulations. MSD sheets are updated regularly, therefore, please request and review the most current MSD sheet before handling or using any product. These are available from the nearest Dow sales office.

Customer Notice

Dow encourages its customers to review their application of Dow products from the standpoint of human health and environmental quality. To help ensure that Dow products are not used in ways for which they were not intended or tested, Dow personnel will assist customers in dealing with ecological and products safety. Your Dow sales representative can arrange the proper contacts.

Contact information:

For more information about this product please call The Dow Chemical Company.

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<http://www.dow.com/pusystems/index.htm>

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