



## Millathane 66 (Premilled)

Millathane 66 is a peroxide curable polyurethane rubber for the production of oil-, fuel- and chemical resistant parts, which require an excellent low- and high temperature performance and high mechanical strength; Millathane 66 (premilled) already contains 1.5 phr of a poly-carbodiimide as a stabilizer for improved hydrolysis resistance and heat ageing properties.

### Product Description

Chemical composition:	Synthetic rubber based on ester/MDI polyurethane
Specific gravity:	Approximately 1.15
Appearance:	white to tan colored milled sheets
Package:	50 lbs per box
Storage stability:	1 year under dry and cool conditions

### Processing

Millathane 66 (premilled) is processed by techniques which are common to the rubber industry; compounds can be mixed on an open mill or in an internal mixer; very often a compound can be mixed in one step including the vulcanization chemicals; molded articles can be produced via compression-, transfer- or injection molding, especially in injection molding Millathane 66 provides very short cycle times, excellent flow and de-molding and shows hardly any mold fouling; due to the peroxide vulcanization and it's chemical base Millathane 66 can not be cured in open steam and is therefore in hose applications only used as inner liners. Calendered sheets can be press- or rotocured.

### Properties

Vulcanizates based on Millathane 66 (premilled) offer a very good heat resistance, excellent low temperature properties, low compression sets, high mechanical strength and outstanding dynamic properties with high chemical resistance and low gas permeability. Millathane 66 maintains it's properties nearly unchanged over a wide range of temperatures which makes it a perfect choice for seals, gaskets, Orings, membranes, CV-boots, dust covers, mounts and bearings for the automotive industry and for many other hydraulic or pneumatic applications. Millathane 66 (Premilled) is also widely used in the production of rollers and flippers for office machines and drive belts for audio- and video equipment.

### Compounding

Compound design of Millathane 66 (premilled) follows the typical pattern of formulating peroxide-crosslinked rubber compounds: active fillers like carbon black or fumed silica increase the mechanical strength, a variety of dialkyl peroxides like Dicumyl peroxide, t-butyl cumyl peroxide, 2,5-dimethyl-2,5-di (t-butylperoxy) hexane etc., can be used as vulcanization chemicals. The use of co-agents like triallyl cyanurate results in a very high crosslinking density and improves the compression set.

Millathane 66 (premilled) contains 1.5 phr of an aromatic polycarbodiimide for the improved hydrolysis resistance and heat aging properties; in a few applications further addition of 1.5 – 3.0 phr carbodiimide might be recommendable.

## Vulcanization Conditions

Compounds based on Millathane 66 (premilled) are vulcanized at temperatures of 140 - 180°C, depending on the peroxide, section of the part etc. Injection molded parts with a wall thickness of less than 2mm can be vulcanized in approximately one minute at 170 - 180°C mold temperature.

## Formulation Example

Millathane 66	101.5	Hardness, A	68
Stearic acid	0.25	Tear Die C,	kN/m 37
Stabilizer 2000 (Rashig)	1.5	100% Modulus, MPa	3.8
N 330 black	20.0	200% Modulus, MPa	12.3
Dicap 40 C	6.5	300% Modulus, MPa	27.5
TAC	1.0	Elong. at break, %	310
		Tensile strength, MPa	29
		Compr.set, 22h @ 100C	11%

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