



## Blocked Isocyanates



The leading manufacturers  
of polyurethane adhesives  
and coatings

{ A bond for life }

## Strong, durable and long-lasting Blocked Isocyanates have a multitude of applications for our customers.

Leeson Polyurethanes Ltd produce a range of blocked aliphatic isocyanate systems. The range aims to overcome some of the limitations with traditional PU technology, namely:

- Stability in 1K systems
- Pot life restrictions in 2K systems
- Sensitivity to moisture, both ambient and trace levels in raw materials
- Increasing concern regarding free isocyanate levels in systems

The Leeson Polyurethane range includes 4 blocking agents, allowing customers to choose the temperature (and also the isocyanates), they wish to use. Detailed below are the 4 blocking agents used within our range.

BLOCKING AGENT	UNBLOCKING RANGE (°C)
Diethyl malonate (DEM)	100 - 120
Dimethyl pyrazole (DMP)	110 - 120
Methylethyl ketoxime (MEKO)	140 - 160
ε-Caprolactam (ε-CAP)	160 - 180



### BLOCKED ISOCYANATES

Typical applications:

- OEM - Coil Coating
- Automotive Coatings
- Electrostatic Coatings
- White Goods



# Blocked Isocyanates

## How does the technology work?

During manufacture, we react the blocking agent onto isocyanate. This gives an inert and non-hazardous material, at standard ambient temperatures.

The blocked isocyanate can be compounded into suitable coating systems, which are applied and dried. When cured at the correct unblocking temperature, the isocyanate is able to react with the functional co-binder polymer, to give a final cross linking cure.

## Environmental Impact

The finished system is assessed as non-hazardous to health and the environment. The long service life and seamless surface reduce the need for repairs, maintenance and cleaning. Environmental and health considerations are controlled during manufacture of the products by Leeson Polyurethanes staff.

## Important Notice

Leeson Polyurethanes' products are guaranteed against defective materials and manufacture and are sold subject to its standard Terms and Conditions of Sale, copies of which can be obtained on request.

# Selector Guide

PROPERTY	PU5207	PU5208	PU5209	PU5210	PU5211	PU5364	PU5429	PU5614	PU5615	PU5616
Appearance	Clear straw liquid	Clear straw liquid	Clear straw liquid	Clear straw liquid	Clear straw liquid	Clear straw liquid	Clear straw liquid	Clear low viscosity liquid	Clear low viscosity liquid	Clear low viscosity liquid
Viscosity at 25°C (mPa.s)	≤1000	900 - 1300	2050 - 2450	3200 - 3800	1300 - 1500	1000 - 1400	1000 ± 500	<1000mPa.s	<200mPa.s	<1000mPa.s
Density at 25°C (g/cm³)	1.0 - 1.1	1.0 - 1.1	1.0 - 1.1	1.0 - 1.1	1.0 - 1.1	1.0 - 1.1	1.0 - 1.1	1.0 - 1.1	1.0 - 1.1	1.0 - 1.1
Solids content (%)	68 - 72	68 - 72	68 - 72	63 - 73	68 - 72	63 - 67	68 - 72	38 - 42	38 - 42	38 - 42
Isocyanate type	HMDI Trimer	HDI Biuret	HDI Biuret	IPDI Trimer	HMDI Trimer	IPDI Monomer	HDI Biuret	HMDI Trimer	HMDI Trimer	HMDI Trimer
Solvent	1-Methoxy-2-Propanol	1-Methoxy-2-Propanol	Naphtha B	Naphtha B Butyl acetate	1-Methoxy-2-Propanol	1-Methoxy-2-Propanol	1-Methoxy-2-Propanol	Water	Water	Water
Flashpoint - closed cup (°C)	31	31	48	22	31	31	31	N/A	N/A	N/A
Boiling point (°C)	120	120	135	126	120	120	120	N/A	N/A	N/A
Apparent % NCO (as supplied)	10.12	10.2	10.2	7.9	10.5	7.46	8.94	4.0	5.1	4.8
Apparent eq. wt. (as supplied)	415	410	410	530	400	563	470	1056	826	875
Blocking agent	3,5-Dimethyl-pyrazole	3,5-Dimethyl-pyrazole	3,5-Dimethyl-pyrazole	3,5-Dimethyl-pyrazole	Methylethyl Ketoxime	3,5-Dimethyl-pyrazole	Diethyl-malonate	Dimethyl-pyrazole	Dimethyl-pyrazole	Dimethyl-pyrazole
Application	Automotive & Coil Coating	Coil	Coil & Electrostatic	Automotive & Coil Coating	Automotive & Coil Coating	Automotive & Coil Coating	Automotive & Coil Coating			



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