**Type**  Blocked aliphatic polyisocyanate based on hexamethylene diisocyanate

**Features**

# Low curing temperature (90 °C for base coat application)
# Good storage stability

**Applications**

# One-component applications
# Plastic coatings (curing-temp. 90 °C for base coat)
# Base coat for automotive bumper

**Typical properties**

Appearance  Colorless to slightly yellowish clear liquid
Non-volatile  60 wt%
Solvent  Xylene / n-Butanol=15 / 25 (wt%)
Blocked NCO content  6.5 wt%
Viscosity  200 mPa s at 25 °C
Color value  < 1 (Gardner)
NCO equivalent weight  Approx. 646
Flash point  21.1 °C

**Compatibility**

<table>
<thead>
<tr>
<th>With polyols</th>
<th>Resin solution</th>
<th>Dried film</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acrylic</td>
<td>Setalux 1184(*)</td>
<td>+</td>
</tr>
<tr>
<td></td>
<td>Setalux1767(*)</td>
<td>+</td>
</tr>
<tr>
<td>Polyester</td>
<td>Setal 90173(*)</td>
<td>+</td>
</tr>
<tr>
<td></td>
<td>Setal 6306(*)</td>
<td>+</td>
</tr>
</tbody>
</table>

+ ; Soluble, ~ ; Insoluble + ; Transparent, ~ ; Hazy

(* )Nuplex Resins (ex-Akzo Nobel Resins’ product)

Mixing ratio of DURANATE™ MF-K60X with polyols is based on NCO/OH equivalent ratio of 1/1.

These values provide general information and are not part of the product specifications.
S.S. of film cured by MF-K60X

**Formulation:**
- Polyol: manufactured and sold by Akzo
  - Polyester Polyol; Setal 90173 (OH%=2.27wt%, NV=50wt%)
  - Acrylic Polyol; Setalux 1184 (OH%=2.0wt%, NV=52wt%)
- Blocked Polyisocyanate: DURANATE™ MF-K60X
- NCO / OH = 1.0

Bake: 30min.

**Gel fraction vs. Curing temperature**

<table>
<thead>
<tr>
<th>Polyol</th>
<th>Gel fraction (wt%)</th>
<th>Hardness of film (Koenig)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>80</td>
<td>90</td>
</tr>
<tr>
<td>Setal 90173</td>
<td>63</td>
<td>86</td>
</tr>
<tr>
<td></td>
<td>(95)</td>
<td>(97)</td>
</tr>
<tr>
<td>Setalux 1184</td>
<td>72</td>
<td>86</td>
</tr>
<tr>
<td></td>
<td>(89)</td>
<td>(93)</td>
</tr>
</tbody>
</table>

*( ) ; cured by conventional HDI trimer (Non-Blocked)*
High curing speed

Curing speed of MF-K60X is faster than that of melamine.

![Graph showing high curing speed]

Storage stability of paint using MF-K60X

![Graph showing storage stability]

1. **Formulation**:  
   - Polyol: Acrylic Polyol A801  
     (manufactured and sold by DIC, OHV = 100 mgKOH/g Resin)  
   - Blocked Polyisocyanate: DURANATE™ MF-K60X  
   - NCO / OH = 1.0

2. **Storage condition**: 40 °C under Nitrogen

3. **Measurement of Viscosity**: Ford Cup #4 at 20 °C

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Polyol polyester (Setal6306 SS-60 of Nuplex OH = 2.7%, AV = 42mgKOH/g)  
Baking Temp.: 140 °C
Storage, handling and use

DURANATE™ MF-K60X is sensitive to moisture and should therefore always be stored in sealed containers. After an original container is once opened, the atmosphere in it should be replaced with dry N₂ or dry air. Because this product reacts with water to form CO₂ gas. Avoid storage below approx. –5 °C even in winter, or a milky turbidity might appear or solidification might occur in the product. However, even in such a case, it will get back clear by heating to 40—50 °C. Heat by water bath etc., and keep away from all sources of ignition. This product might become slightly yellowish red after more than about 6 months. But this color change had no effect on its properties.

For further information:

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