**BrüggemannChemical**
L.Brüggemann Kommanditgesellschaft

## AP- Nylon Materials

*Application sheet 07*

# Nyrim® Truck components

**BrüggemannChemical** provides raw materials for three distinct families of **AP-Nylon** (polyamides produced by **A**nionic **P**olymerization) used in a wide range of applications.
Mechanical properties of these AP-Nylons extend from thermoplastic polyamides into rubber-like elastomeric materials.

**AP Caprolactam** along with different catalyst systems (**Bruggolen® C**) leads to standard cast Nylon 6.

**Nyrim®** is elastomer toughened, recyclable, thermoplastic Nylon 6 for industrial Reaction Injection Molding (RIM), Injection Molding and Rotomolding applications. Nyrim® usually contains 10-40% built-in elastomer, depending on the specific performance needs.
The stiffness / toughness combination of Nylon-6 and elastomer gives excellent impact resistance, wear resistance and repetitive load (fatigue) endurance.
Nyrim® can be selectively reinforced with glass fiber or glass mats and can also be filled with mineral fillers.

**Star-Rim** is a toughened Nylon suitable for RIM processing. It can also be reinforced with glass or filled with mineral fillers.

**RIM processing** is the preferred method to manufacture large, complex or thick parts.
RIM processing allows for large design flexibility.
Pressures are lower than injection molding pressures, resulting in lower mold and manufacturing costs.

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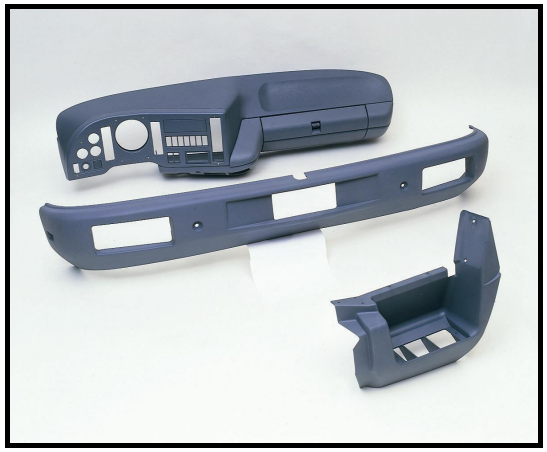
The Daewoo-Avia truck is a small truck up to 7.5 tons in weight. It is manufactured in relatively small series (about 5000 per year).

Both interior and exterior parts were produced out of Nyrim. Nyrim proved to be the most cost/performing system for these parts. Besides Nyrim, SMC, vacuum forming and other RIM processes have been evaluated.

Other benefits are the possibility of integral coloring of Nyrim as Daewoo-Avia did not request painting. Furthermore also the large design freedom in Nyrim. Nyrim allows for lugs (bosses) to be molded in easily. These bosses facilitate assembly.
Product recycle ability was also an issue.



| Important features for this application | |
|---|---|
| Physical properties features | RIM design features |
| • Colorable or paintable<br>• High impact strength<br>• Recyclable | • Design flexibility allows to mold in bosses<br>• Large parts can be molded economically in small series |