

AP- Nylon Materials

Application sheet 09

Brüggemann Chemical provides raw materials for three distinct families of **AP-Nylon** (polyamides produced by **Anionic Polymerization**) 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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Nyrim® Dentist chair

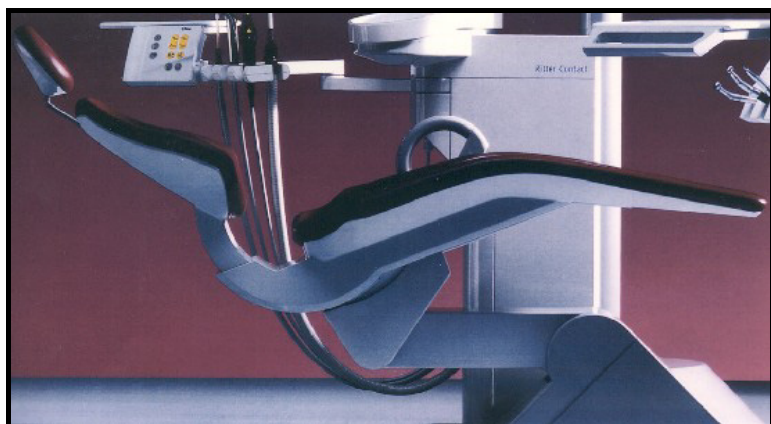


Nyrim is the material of choice for a dental patient chair that significantly maximizes part integration.

Part integration was made possible by lost core technology and RIM processing resulting in the need for only two parts per assembly: an 11 kg seat and a 4.1 kg back. Sectional wall thickness ranged from 80 mm to only 0.6mm ... the latter of which is essential to the functioning of localized pressure sensors. A reduction in the total number of seams helps eliminate dirt collection and promotes good hygiene through ease of cleaning.

Nyrim was selected in this instance because of its properties that are conducive to molding both thin and thick sections and that allow large thickness changes.

RIM low pressure also facilitated the use of core technology and contributed to cost efficient tooling.



Important features for this application

Physical properties features

- Excellent toughness / resilience
- Stiffness / flexibility balance for "comfort"

RIM design features

- Design freedom: both thin and thick sections can be molded in a single part
- Lost core technology
- Large surface parts with complex geometry are molded with low clamping tonnage