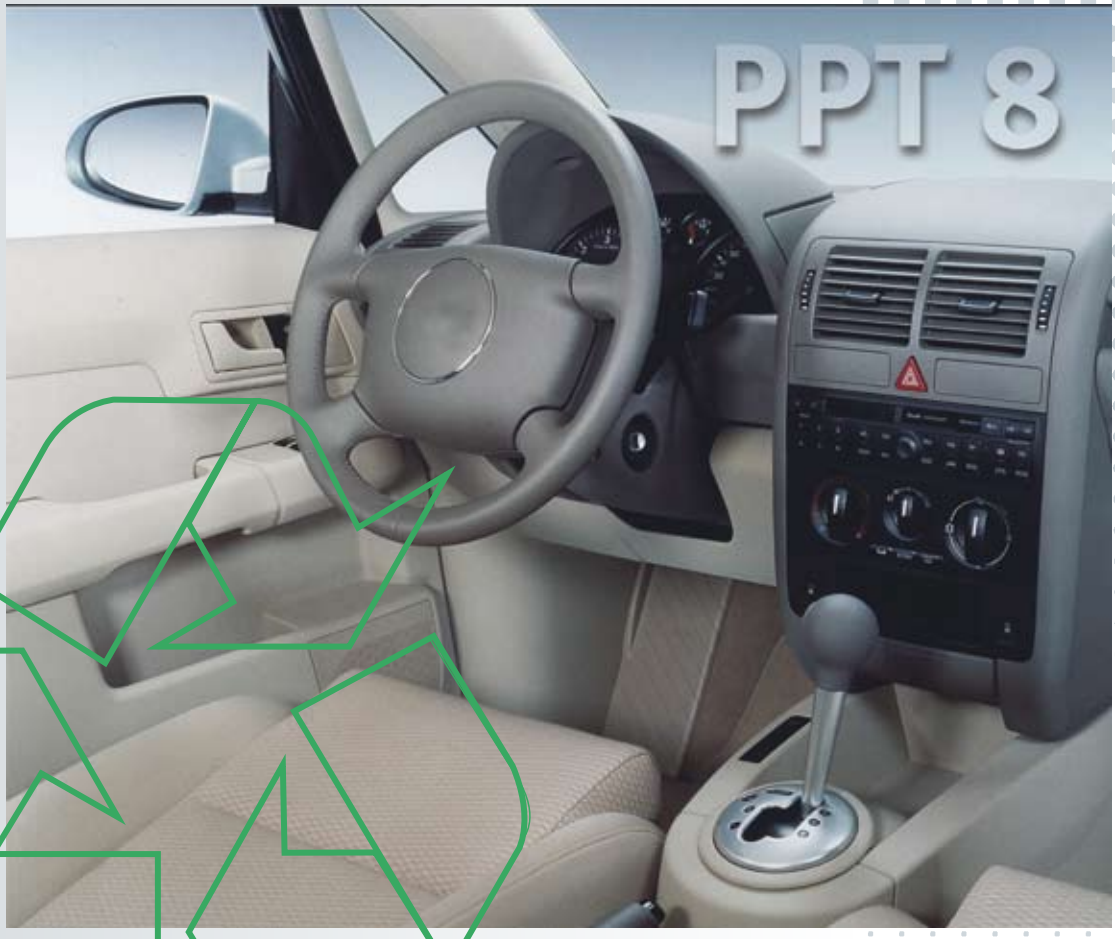
PPT 8

Hennecke
Polyurethane Technology

TECHNICAL DATA SHEET

Pentane Process Technology
for up to 8 parts by weight of pentane



PPT 8 - concept

When processing the eco-friendly blowing agent pentane, producers have to fulfill high safety requirements. Although pentane is environmentally safe (no ozone depletion: ODP = 0, negligible global warming potential: GWP = 0.001), certain concentrations and mixtures of it are highly flammable.

The PPT 8 system is suitable for applications with up to 8 parts by weight of pentane per 100 parts by weight of polyol. Like the PPT system, the PPT-8 system relies on the adherence to primary and secondary measures. The safety measures were adapted to the lower emissions and remain at a satisfactory level. This is achieved by avoiding cost-intensive potentially explosive zones, for example by using a ventilation system that is matched to the individual conditions. This device ensures regular air changes in the area of the supply station for polyol/pentane mixture, metering machine and mould. If the tanks and metering machine are mounted right next to each other, they can „share“ one ventilation system.

The ventilation system is controlled and monitored by a higher-level PPT 8 safety control system. This control unit is also responsible for evaluating pentane danger switches and disconnecting the moulding area from power in the event of an alarm. Due to the low pentane content, the control system requires no gas sensors, resulting in a reduction of investment costs; maintenance work and periodical checks become obsolete.

The ready-mixed polyol-pentane blends are usually supplied in containers or drums, thus eleminating the hazardous handling of the pure blowing agent. The mixture is transferred from the drum or container into the machine tank by means of a transfer station next to the metering machine. The transfer station accommodates only one drum or container at a time. Larger quantities have to be stored in a separate room.

To employ PPT 8, the following requirements must be fulfilled:

- **Blowing agent content:** up to 8 parts by weight of the polyol component
- **Flammable blowing agents:** c-pentane / n-pentane / isohexane
- **Max. part weight:** 1000 g
- **Max. part volume:** 10 litres

If these requirements are fulfilled, the PPT-8 technology can be implemented on any pentane-blown, rigid and semi-rigid integral skin foam production line, including existing Hennecke plants and systems from other suppliers, for example in the production of gearshift knobs, steering wheels and casement sections. The PPT 8 system can be combined with both TopLine HK and BaseLine machines.

Comparison of PPT and PPT 8

PPT	PPT 8
Up to 20 parts by weight Flammable blowing agent per 100 parts by weight of polyol	Up to 8 parts by weight Flammable blowing agent per 100 parts by weight of polyol
Unlimited parts size	Max. parts size 1000 g or 10 L
Mixture preparation in the PENTAMAT	Usually supplied as ready-mixed blend
Gas sensors	No gas sensors
Inerting of closed moulds	No inerting
High safety standards	Appropriate safety standards

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