starlim

STARLIM CARBON DIOXID COLD CURING

SCD cleaning is a cleaning process with liquid CO2. It is cleaned under pressure, with approx. 50 bar in the liquid subcritical state. The temperature is between 0 and 15°C.

The liquid CO2 serves as a kind of solvent due to its extremely low surface tension. The result of this process is the extraction of volatile and extractable components from the silicone matrix.

OPPORTUNITIES OF SCD

1. **Volatiles & extractables**
   Washing out of non-crosslinked cyclic (D4-D20) and unreacted linear siloxanes. Some of these components are reduced to below the detection limit.

2. **Process**
   Lead time approx. 30 minutes. SCD removes as many volatiles as 4 hours annealing with 200°C.

3. **Material Characteristics**
   Initial properties („as molded") such as ultimate elongation, hardness and resistance to tear propagation remain unchanged.

4. **For sensitive components**
   - Thin-walled components that can be deformed by hot air
   - Multi-component parts can be cleaned
   - Prevents post-curing slit healing

5. **High wall thickness**
   Even thick-walled components can be cleaned in a appropriate amount of time

6. **Cleaning directly in the packaging**
   Special packaging for clean room applications

2-COMPONENT PART APPLICATION

- **Multi-component parts**
  Cleaning possible for parts made of thermoplastics which can not be post-cured due to high temperature
- **Low tendency to stick during installation**
  Sticking to other components in the application should be prevented
- **Sensors**
  Increased requirement for the proportion of volatile components due to the proximity to sensitive electronic and mechanical sensors
- **Adhesion**
  The different materials stretch differently – delaminations occur

LIGHT APPLICATION

- **Dimensional stability**
  Tempering not possible due to the geometry
- **Fogging**
  The application requires a low volatile content to prevent fogging of secondary optics
- **Post-polymerization/gluing**
  Optically polished surface might „stick together" due to the high tempering temperatures

VALVES APPLICATION

- **Streamlined migration**
  Migration limits can also be complied without changing the material
- **Post-polymerization/Gluing**
  Post-polymerization of the cut surfaces can be largely avoided by means of SCD cleaning (due to the significantly reduced proportion of non-crosslinked parts)
- In addition, slit healing can be reduced during radiation sterilization.

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