

Akulon® K224–HG3

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This quick start instruction gives an indication of the key settings for processing Akulon® K224–HG3 to ensure best crystallization and prevent material degradation as a result of hydrolysis or thermal load. It is a summary of the Injection Molding Recommendations which can be found in our Plastics Finder at <https://plasticsfinder.com>. Our online guidelines are recommendations to help with material processing and/or to evaluate and resolve potential processing issues.

MATERIAL HANDLING

Drying

Akulon® grades are hygroscopic and absorb moisture from the air relatively quickly. Moisture absorption is fully reversible under the following drying conditions without compromising material quality. Preferred driers are de-humidified driers with dew points maintained between –30 and –40°C / –22 and –40°F. Vacuum driers with N₂ purge can also be used. Hot air ovens or hopper driers are not suitable for pre-drying Akulon® grades; the use of such driers may result in non-optimum performance.

| Moisture content | Time | Temperature | |
|--------------------------|------|-------------|------|
| [%] | [h] | [°C] | [°F] |
| 0.1–0.2 and as delivered | 2–4 | 80 | 176 |
| 0.2–0.5 | 4–8 | 80 | 176 |

Drier types that are not de-humidified can be operated until 100°C but care has to be taken with natural/light colors for which a color change might be observed upon drying depending on time/temperature exposure.

TEMPERATURE SETTINGS

Barrel temperature

Optimal settings are governed by barrel size and residence time. Furthermore, the level of glass and/or mineral reinforcement and the presence or absence of flame retardant have to be taken into account.

| Mold/Tool | Measured melt | Nozzle | Front | Center | Rear | |
|--------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|--|
| 50 – 80°C 122 – 176°F | 250–285°C 482–545°F | 260–280°C 500–536°F | 265–280°C 509–536°F | 265–275°C 509–527°F | 255–265°C 491–509°F | |

MELT RESIDENCE TIME

The optimal Melt Residence Time (MRT) for Akulon® K224–HG3 is ≤ 6 minutes with preferably at least 50% of the maximal shot volume used. The MRT should not exceed 10 minutes.

A full self-service MRT calculation can be done using the following [link](#).

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