



Compounding Guidelines for JJAZZ Non-Halogenated Flame Retardant

Temperature Sensitivity

As with most halogen free flame retardants, **JJAZZ is temperature sensitive**. It is important to control melt temperature via external heat (barrel temps) as well as internal heat (shear heat). We recommend the use of an in-stream melt probe to ensure melt temperature is maintained below 202°C. Elevated temperatures will result in reduced flame retardant efficiency and the lowering of physical properties.

Compounding

Experience has shown that twin-screw and co-kneading compounding works well, however any method of ensuring good dispersion with controlled melt temperature should be sufficient.

Process Guidelines (twin-screw)

Equipment – 40-48 L/D is recommended.

Screw design – low shear screw designs are recommended on 25-58 mm lines. Screw designs should allow low process RPM's to minimize shear heat.

Die/Adapter – recommend minimal material volume and dead space to control degradation caused by time/temperature.

Material feeding – gravimetric feeding is recommend to ensure proper loading levels. Split feed is recommended at 1/3 JJAZZ in the feed section and 2/3 downstream in barrel seven (approximately 31% of JJAZZ by itself is needed to achieve UL94 V0 in olefins). To eliminate fluidizing the powder (JJAZZ) and causing problems in feed, a short distance between feeder discharge and feed throat/side feeder is recommended.

Drying

In order to achieve very smooth extruded products, it is highly recommended to dry compounds containing JJAZZ in a desiccant drier ($\geq 40^{\circ}\text{C}$ dew point) or equivalent prior to use. **The recommended moisture content is 0.04% or lower**. Under normal conditions this moisture level is achieved by drying 3-4 hrs @ 85°C (base resin dependent).

In order to achieve optimum molded parts, it is highly recommended to dry compounds containing JJAZZ in a desiccant drier ($\geq 40^{\circ}\text{C}$ dew point) or equivalent prior to use. **The recommended moisture content is 0.08% or lower**. Under normal conditions this moisture level is achieved by drying 2-4 hrs @ 85°C (base resin dependent).