

Handling Protocol

Antares supplies Vitamin E TPGS in multiple grades, Pharmaceutical Grade (NF), Food Grade (FG), and Sunflower TPGS™ (non-GMO) in both NF and FG grades. General instructions for handling and basic use for all grades are found below.

HANDLING TPGS – MELTING & DISPENSING

Melting

Antares Vitamin E TPGS is a waxy solid at room temperature. For almost all applications, TPGS will need to be melted for use. TPGS melts at about 38 °C (body temperature). Melting is best accomplished by maintaining closed containers at a constant 45-60 °C temperature using a water bath or heating cabinet. TPGS has low thermal conductivity which means it has the properties of an insulator and will melt slowly. Higher temperatures than suggested will not significantly shorten the melting cycle. The HDPE containers in which TPGS is packaged should not be exposed to temperatures approaching 80 °C, as HDPE material softens near that temperature and could pose safety hazards for handling if heated to that excessive, unnecessary temperature.

When planning for use, sufficient time should be allowed for complete melting to ensure material it is ready to dispense when needed.

Re-melting

Re-melting a partially used container poses no stability issues, as TPGS is stable to multiple melt, solidify, re-melt cycles as long as the material remains uncontaminated in its original container and is stored as directed when not in use.

Dispensing

When only a portion of TPGS material from a single container is to be used, it is suggested that the entire contents of the container be melted before dispensing. Microscopic stratification of the material does occur as product solidifies. And complete melting of each container before dispensing will eliminate any concerns of non-homogeneity for any product that remains in a partially used container.

EMULSION PREPARATION – GENERAL GUIDELINES

Melt TPGS and hold at 45-50 °C

Add lipid material to melted TPGS in an appropriate ratio (based on the solubility of lipid in TPGS)

Mix until homogeneous and bring back to 45-50 °C (temperature can be increased if melting temperature of lipid is higher than 50 °C).

Heat 60% (of final volume of) water to 50 °C

Add TPGS mixture slowly to heated water with maximum agitation (that will not incorporate air and cause foaming)

Remove from heat

Continue stirring until cooled to room temperature

Dilute to desired volume

DISPERSING ONTO POWDERS – GENERAL GUIDELINES

Melt TPGS and hold at 45-50 °C

Load adsorbent carrier powders into appropriate blender (planetary, ribbon or other high-shear blender)

Slowly add molten TPGS to powder with appropriate mixing speed

Discharge and cool to room temperature

Process to desired particle size

Blend with additional powdered functional ingredients, active ingredients and flow aid ingredients as needed

HEAT AND PRESSURE STERILIZATION

Vitamin E TPGS is chemically stable to conditions of heat and pressure used in sterilization protocols for those applications that require it.

STORAGE & SAFETY

Receipt and Storage

Antares Vitamin E TPGS is shipped to customers in sealed, tamper-evident, HDPE, wide-opening containers. Containers should be kept sealed in storage conditions that are cool and dry until ready for use.

Safety

End users should review product Safety Data Sheet prior to use. All safety precautions indicated in the Safety Data Sheet and those appropriate to the handling of molten materials should be followed.

Fitness-for-Use

Quality procedures appropriate to the end user's application and finished product labeling should be followed. Determination of fitness-for-use of Antares TPGS is the responsibility of the end user for their specific application including safety, labeling and regulatory compliance for its intended market.

For additional information regarding the use of Antares Vitamin E TPGS or formulation assistance for your particular application, please Contact Us.

Download Safety Data Sheet, Product Data Sheet and additional product documentation from our Documentation page.