DESCRIPTION:

POLYCAST® 3 is a clear, yellowish, viscous liquid with an average molecular weight of 250. It is characterized by its narrow oligomer distribution, ranging mainly from diglycerol to pentaglycerol with trace amounts of glycerol. It is water soluble and is less hygroscopic than glycerol or diglycerol.

INCI Name: Polyglycerin-3
CAS #: 25618-55-7
EINECS #: 259-986-8

INTEREST:

The higher refractive index of POLYCAST® is of notable value in the design of transparent personal care formulations.

This material can serve as a replacement for polyoxyethylene compounds.

Transparent emulsions are obtained when the aqueous and oily phases have a similar refractive index. The use of higher refractive index ingredients like POLYCAST® in the aqueous phase has several advantages:

- Can reduce the need for addition of other components that increase the refractive index, thus reducing cost.
- Allows the addition of more water to the formulation, also reducing cost.
- Improves the optical clarity of the formulation.

POLYCAST® is free of material from animal sources and is kosher-certified. The raw materials used for its production are either synthetic or from plant origin. The latter is obtained from oils certified from countries where genetically modified crops are currently forbidden.
CHARACTERISTICS:

Identification
Description: Clear, yellowish viscous liquid
Color (APHA): ≤ 250 ppm
Triglycerol: 35 - 55%
Diglycerol: 15 - 30%
Tetraglycerol: 10 - 25%
Pentaglycerol: ≤ 10%
Higher oligomers: ≤ 5%
Water: ≤ 1000 ppm
Chloride: ≤ 100 ppm

Physical properties*
Density: 1.284 g/ml
Dynamic viscosity: 41 Pa.s
Refractive index: 1.491
Dielectric constant: 30
Heat of dissolution in water: -57 J/g
Specific heat capacity: 2.24 J/g K
Thermal conductivity: 0.26 W/m.K
Thermal expansion coefficient: 0.00051°C-1 (20-60°C)
Flash point: 260°C
Fire point: 296°C
Autoignition: 400°C

*Results obtained at 25°C unless otherwise noted

SAFETY:

Information related to safety procedures is available in the material safety data sheet.