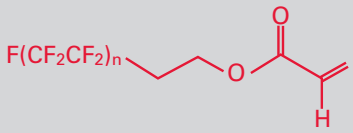
DuPont™ Zonyl® TA-N

PERFLUOROALKYLETHYL ACRYLATE ESTERS



DuPont™ Zonyl® TA-N is a mixture of homologous perfluoroalkylethyl acrylate esters useful in making surfactants, repellents, lubricants, and other high performance fluorinated products. Zonyl® TA-N is part of a large family of fluorinated specialty monomers offered by DuPont. For information on other Zonyl® monomers, contact us or visit our website at www.zonyl.dupont.com.

Specifications

Property	Limit, wt%	Typical value, wt%
Perfluoroalkylethyl acrylates	87.0 min.	91.8
Perfluoroalkylethyl alcohols	3.0 max.	2
Cyclohexane	1.0 max.	0.4
Perfluoroalkylethyl methacrylates	3.0 max.	0.2
Fluoropolymer	3.0 max.	0.5
Perfluorohexyl ethyl acrylate	0.1–5.0	1.8
Perfluorooctyl ethyl acrylate	46.0–65.0	51.1
Perfluorodecyl ethyl acrylate	23.0–29.0	26.1
Other perfluoroalkylethyl acrylates	9.1–16.0	12.8
Water, ppm	2000	1000

Appearance: clear, yellow liquid when heated to 70°C

Uses

Zonyl® TA-N is a versatile monomer used to provide coatings with low surface energy and excellent spill repellency, stain release, and soil resistance. Zonyl® TA-N serves markets in textiles, carpeting, paper, wood, and leather. In addition, Zonyl® TA-N-based products are used in cosmetics, surface treatments, UV curable coatings, fire fighting agents, and fiber optics where they impart low surface energy, increased chemical stability, and improved surface lubricity.

Zonyl® TA-N can easily undergo free radical-catalyzed homopolymerization and copolymerization with a wide variety of monomers including alkyl (meth)acrylates, vinylidene chloride, vinyl chloride, and styrenes. Zonyl® TA-N is soluble in common solvents for solution copolymerizations or can be easily dispersed in water with cationic, nonionic, or anionic surfactants for emulsion copolymerizations. Zonyl® TA-N monomer acrylate, and the similar product Zonyl® TM monomer methacrylate, form a versatile pair in formulation of a broad range of specialty fluorinated polymers.

Specific applications of Zonyl® TA-N are shown below. Contact us for additional information.

- ***Surface Treatments:*** Zonyl® TA-N offers hydrophobic and oleophobic properties which are utilized in preparing emulsions and microemulsions for treating synthetic materials, natural products, and porous surfaces
- ***Cosmetics:*** Zonyl® TA-N copolymers can be used in oil-in-water emulsion cosmetics or cosmetic powders with improved oil- and water-resistance, imparting elasticity to the skin without a sticky feeling
- ***UV Curable Coatings:*** Zonyl® TA-N is effective in photocurable systems for lithography, ink jet printing, and other applications
- ***Lubricant Additives:*** Wear resistant lubricant additives are made from ethylene/(alpha)-olefin polymer grafted with Zonyl® TA-N
- ***Repellent Elastomers:*** Expandable bladders for manufacturing pneumatic tires use Zonyl® TA-N to improve mold release
- ***Optical Fiber Coatings:*** Zonyl® TA-N copolymer compositions provide good heat resistance, transparency, and tensile properties for optical fibers
- ***Fire Fighting Formulations:*** Zonyl® TA-N copolymers form the basis for fire-extinguishing agents with high water and oil repellency

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Typical Physical Properties*

Property	Value
CAS Name	1H,1H,2H,2H-Perfluoroalkylacrylate esters
Other Name	Zonyl® TA-N
CAS Number	27905-45-9
Formula	$Rf\text{-}CH_2CH_2OC(O)CH{=}CH_2$
Molecular weight	569
Form	Solid, containing some liquid
Color	Yellow to Amber
Melting Point, °C (°F)	50–60 (122–140)
Solubility in Water, wt%	0
Solubility in Acetone, wt%	>50
Solubility in Methyl Ethyl Ketone, wt%	>50
Solubility in Trichloroethylene, wt%	>50
Solubility in Isobutyl Alcohol, wt%	10–50
Odor	Mild acrylic
Boiling Point, °C (°F)	100–220 (212–428)
Fluorine, %	63.5
Specific Gravity	1.6 at 40°C
Thickening Point, °C	35–45
Viscosity, °C (°F)	10 (40)
Flash Point, °C	>100

* This table gives typical properties (not specifications) based on historical production performance. DuPont does not make any express or implied warranty that this product will continue to have these typical properties.

Handling

DuPont™ Zonyl® TA-N, when freshly produced, is a yellow to amber waxy solid containing some liquid at 25°C. Warming to 70°C with mixing will restore the product to its original state.

Zonyl® TA-N is a skin and eye irritant. Care should be taken to avoid exposure by wearing appropriate gloves, safety glasses, and other protective equipment as needed. Refer to the MSDS for further handling information.

Packaging and Shipping Information

Zonyl® TA-N is not regulated by DOT, IMO or IATA. It is available in net 18.16 kg (40 lb) steel pails, 181.8 kg (400 lb) steel drums, and 3.632 kg (8 lb) cans.

Contact Us

For orders, samples, or technical inquiries, contact any of these locations world-wide:

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