

The DAIKIN logo consists of the word "DAIKIN" in a bold, blue, sans-serif font. To the right of the text is a square graphic divided diagonally from the top-left to the bottom-right. The upper-left triangle is black, and the lower-right triangle is light blue.

Product Information

DAIKIN-POLYFLON™ PTFE

Aqueous Dispersions

DAIKIN-POLYFLON PTFE dispersions are milky-white aqueous dispersions of stabilized minute particles of PTFE obtained by emulsion polymerization of tetrafluoroethylene. PTFE offers a broad range of desirable characteristics including chemical stability, excellent electrical properties, heat resistance, chemical resistance, non-sticking and low-friction properties, and dielectric characteristics. PTFE Aqueous Dispersions are used in a wide range of applications.

Thermal Properties:

Daikin PTFE can be used continuously at temperatures of up to 260°C and can be used for short periods at even higher temperatures. Daikin PTFE possesses excellent low-temperature strength, as well. Due to these superior thermal properties, Daikin PTFE dispersions are widely used as an impregnant in high-quality insulation and belting materials.

Chemical Properties:

Daikin PTFE is completely inert to attack by all chemicals except high-temperature, high-pressure elemental fluorine gas, molten alkali metals and chlorine trifluoride.

Electrical Properties:

Film made from Daikin PTFE dispersions displays a low, uniform dielectric constant and a constant dissipation factor over wide frequency and temperature ranges. Glass cloth laminate, used as insulation material, takes advantage of this feature.

Low Friction, Non-Sticking Properties

Under ordinary conditions of use, Daikin PTFE possesses a low coefficient of friction and therefore, will not cause stickslip. It also possesses an excellent non-sticking quality which prevents most adhesives from adhering to it. Consequently, materials such as laminated films and coatings made of Daikin PTFE dispersions are used in parts for low-load/low-speed precision instruments, spinning/dyeing belts, etc.

Appearance:

Daikin PTFE aqueous dispersions contain a new environmentally-friendly surfactant which provides for a clearer finish on the end product while leaving less residue than older surfactants.

Typical Applications:

Manufacture of cast films, glass fabric laminates, battery binders and impregnated porous materials. Daikin PTFE dispersions can also be formulated into release coatings by adding fillers, adhesion agents, pigments and other additives.

Typical Properties of Daikin PTFE Aqueous Dispersions:

	D-210	D-210C	D-310	D-410	D-610	D-610C
Polymer Type	Homopolymer	Homopolymer	Modified	Modified	Homopolymer	Homopolymer
Solids Content (wt %)	59-61	59-61	59-61	59-61	59-61	59-61
Surfactant Content (wt % on solids)	6.0-7.2	6.0-7.2	6.0-7.2	6.0-7.2	6.0-7.2	5.5-6.5
Specific Gravity @ 25°C	1.50-1.53	1.50-1.53	1.50-1.53	1.50-1.53	1.50-1.53	1.50-1.53
Viscosity (cp @ 25°C)	35 max.	35 max.	35 max.	35 max.	35 max.	35 max.
Critical Cracking Thickness (µm)	14	14	12	12	28	28
pH	8.5-10.5	8.5-10.5	8.5-9.5	8.5-10.5	8.5-10.5	9.5-10.5
Particle Size (µm)	0.22-0.25	0.22-0.25	0.22-0.25	0.26-0.30	0.26-0.30	0.26-0.30

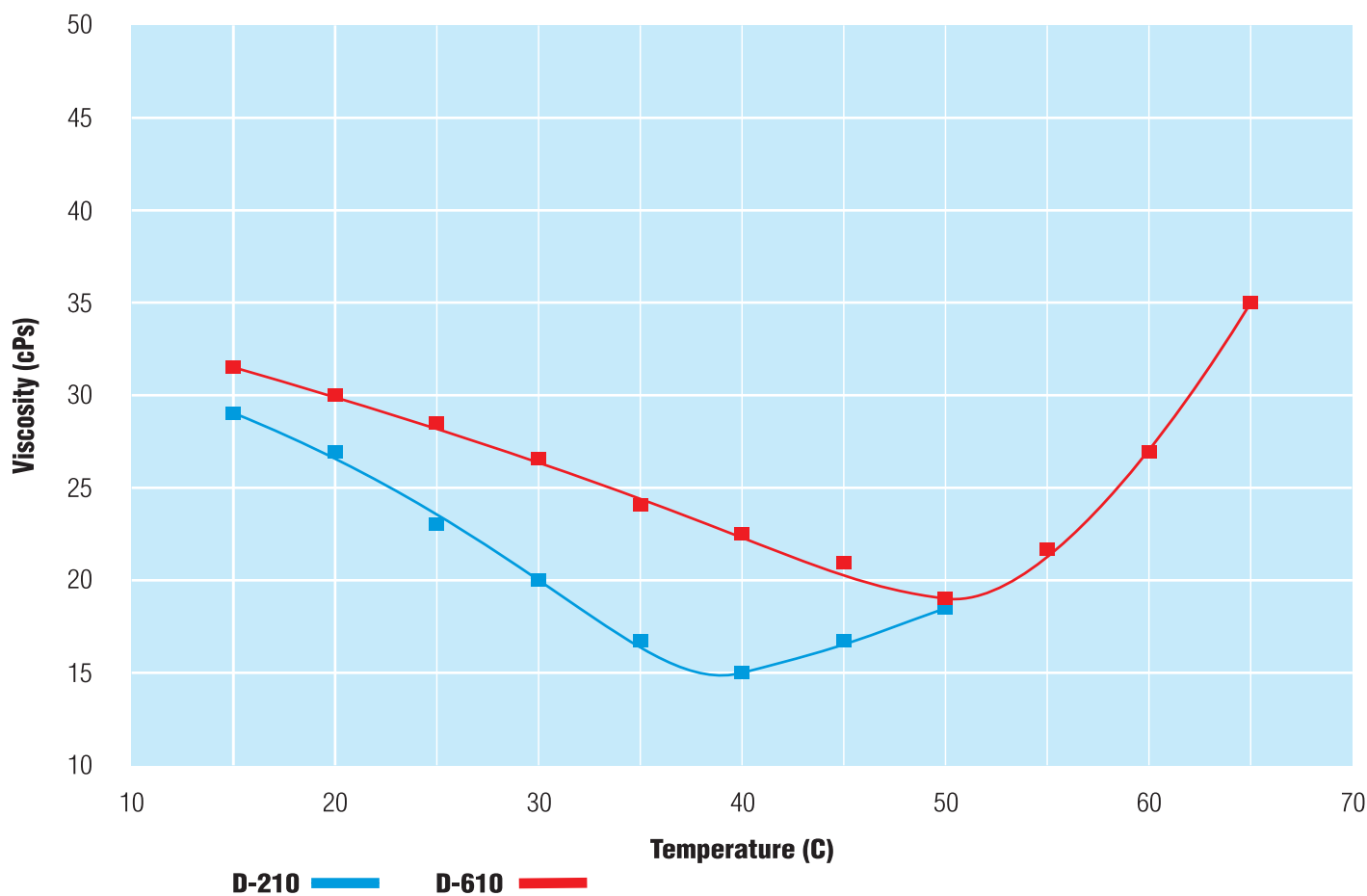
Selection Guide for Daikin PTFE Aqueous Dispersions:

	D-210	D-210C	D-310	D-410	D-610	D-610C
Application						
Glass Cloth Coating	X		X		X	
Battery Binder		X				
Impregnation	X		X		X	
Packings	X				X	
Release Coatings			X	X	X	
Cast Film						X
Features						
High Molecular Weight		X				X
High Gloss			X	X		
Good Wear			X	X		
High Build					X	X
Low Color and Transparency	X	X	X	X	X	X
General Purpose	X					

Relation of Concentration to Specific Gravity

Polymer Concentration (Mass %)	SpG. @ 25°C	g/l PTFE
35	1.25	437
40	1.30	518
45	1.34	604
50	1.40	694
55	1.45	799
60	1.51	909

PTFE Dispersion Viscosity vs Temperature



ASTM Classification of Daikin PTFE Aqueous Dispersions:

Product	ASTM	Type	Grade	Class
D-210	D4441	II	6	B
D-210C	D4441	II	6	B
D-310	D4441	II	6	B
D-410	D4441	II	6	B
D-610	D4441	II	6	B
D-610C	D4441	II	6	A

Storage and Handling:

1. Normal handling:

Wear personal protective equipment (PPE) when handling these materials.

2. Storage:

Seal containers and store at 38°-77°F. **Do not freeze.** The dispersion should be gently agitated on a periodic basis to prevent settling. High-speed or any kind of violent agitation must be avoided.

Safety:

Dispersion may irritate skin and eyes. Avoid prolonged or repeated contact with skin and eyes. Wash hands before eating or smoking. In case of contact, flush with water. For contact with eyes, get medical attention.

When PTFE is heated to temperatures above 260°C, minor amounts of decomposition products may be given off. These decomposition products may be harmful, and inhalation of these fumes must be avoided. Ovens, process equipment and the working area must be adequately ventilated. For further information, please refer to the Daikin America Material Safety Data Sheet for these products and the "Guide to the Safe Handling of Fluoropolymer Resins 4th Edition," published by the SPI Inc., The Society of Plastics Industry, Inc., 1801 K Street, NW, Suite 600K, Washington, DC, 2006-1301 (202-974-5200).

Packaging:

Daikin PTFE Dispersions are available in 210 lb. fiber drums and 2,000 lb. totes.

Quality/Regulatory:

Daikin PTFE aqueous dispersions meet the requirements set forth in the FDA specification 21 CFR 177.1550. Daikin America's manufacturing facility is registered to ISO-9001 (Quality System), ISO-14001 (Environmental Systems) and Responsible Care 14001 (Safety, Health, Environment and Security).

Medical Use:

These products are not specifically designed or manufactured for use in implantable medical and/or dental devices. They have not been tested for such applications and we will only sell them for such use pursuant to contract containing specific terms and conditions required by us.

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