

# TRAMFLOC, INC.

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## Technical Information Bulletin

### TRAMFLOC® 471 to 475 CATIONIC FLOCCULANTS

#### ***Product Description***

Tramfloc® 470 Series products are unique star shaped, granular cationic polyacrylamide formulations of high molecular weight and various cationicities. Tramfloc® 470 Series products are completely water soluble and produce high viscosity solutions at very low concentrations. Tramfloc® 470 Series products are used as a general flocculant and dewatering agent in municipal operations, tailings thickeners and in various industrial applications.

#### ***Uses and Benefits***

Tramfloc® 470 Series products can be used for conditioning primary and secondary digested sludge. Tramfloc® 470 Series products is used alone or with primary coagulants. Tramfloc® 470 Series products offer special benefits in dewatering applications as described below. Tramfloc® 470 series products' charges are fully available, unlike highly cross-linked polymers. Compared to the existing Tramfloc® 200 and 400 series granular cationic products, the star shape polymers provide:

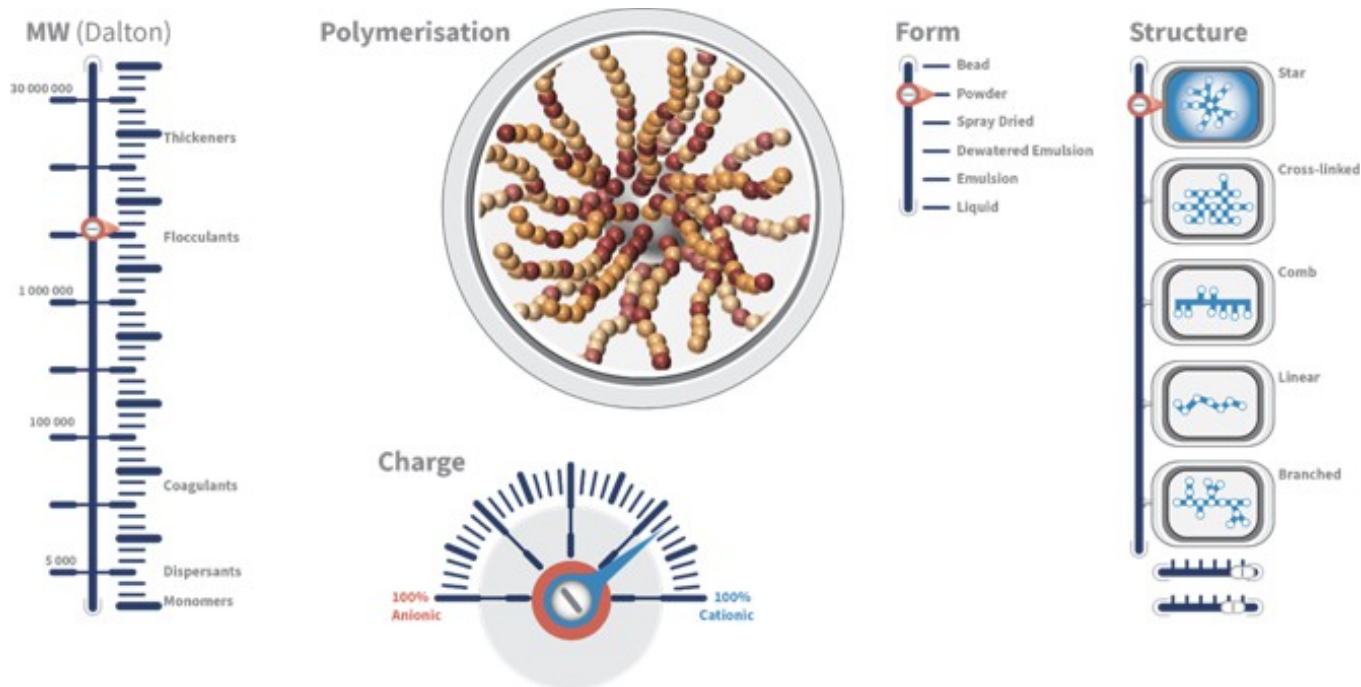
1. Reduced mixing requirements
2. Improved free water drainage and compressibility
3. Significantly improved floc strength and re-flocculation capabilities.

#### ***Typical Physical Properties***

	<b><i>Result</i></b>
Mesh size      %>10 mesh	2 max
%<100 mesh	6 max
Approximate bulk density	0.68
Approximate @ 5.0 g/l	1080
Brookfield        @ 2.5 g/l	560
Viscosity (cps)@ 1.0 g/l	160
Recommended operation conc. (g/l)	4
Max operating concentration (g/l)	10
Dissolution time in DIW (min)	60
Stability of the solution (days)	1
Storage temperature 0°	0 – 35
Shelf life, months	24

#### ***Tramfloc® Product***

	<b><i>Cationicity</i></b>	<b><i>MW</i></b>
471	Ultra Low	Very High
472	Low	Very High
473	Moderate	Very High
474	High	Very High
475	Very High	Very High



### ***Polymer Make-Down***

It is recommended that stock solutions, 0.2-0.5%, be prepared from which feed solutions, 0.05-0.1%, are then made.

### ***Product Packaging***

Tramfloc® 470 Series products is available in 55# triple walled bags packed 40 per pallet and in SuperSaks™.

### ***Handling and Storage***

Polymer solutions should be made-down and diluted in stainless steel, FRP or plastic vessels. Amphoteric metallic components should be avoided. Make-down water temperatures should be between 60-85° F. Unopened bags are hygroscopic and should be stored in a cool, dry place.

### ***Safety and Health***

Dry polymer spills should be left dry and swept up at once. Spills of solutions are extremely slippery. Precautions should be taken to prevent them from entering lakes or streams. Polymer can be flushed with copious amounts of water and disposed of according to local regulations or treated with an absorbent material, then collected for subsequent legal disposal. Tramfloc® 470 Series products have been shown to exhibit a low order of toxicity. Nevertheless, precaution should be taken to prevent inhalation, ingestion or contact with skin or eyes. Observing basic industrial hygiene precautions should prevent any health or safety hazards.

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