Sun Brand™ · Suraj Chemicals, Chennai

Technical handbook for Sun Brand polymers

Choosing a grade, setting a dose, running a jar test and keeping Sunfloc, SunMac, SunDec and SunRedep working well in your plant.

Sun Brand™ by Suraj Chemicals · 92 Govindappa Naicken Street, Shiva Complex, Chennai 600001 · +91 70927 22822 · sales@surajchemicals.com · www.surajchemicals.in

1. Choose the charge first

Polyacrylamide flocculants work by charge. Pick anionic or cationic for your stream, then choose the grade family.

Stream or job	Usual charge	Starting grade
ETP or STP clarification after alum, PAC or ferric	Anionic	Sunfloc Anionic HQ / MQ
Municipal and drinking water clarifiers	Anionic	Sunfloc Anionic HQ / MQ
Mining, sand, gravel and coal washing	Anionic	Sunfloc Anionic HQ / MQ
Sugar mill and steel plant water	Anionic	Sunfloc Anionic HQ / MQ
Sludge dewatering (press, centrifuge)	Cationic	Sunfloc Cationic HQ / MQ
Textile, tannery and pharma effluent	Cationic	Sunfloc Cationic HQ / MQ
Charge neutralisation of colloids (liquid)	Cationic	SunMac SC04
Dissolved dye in textile effluent	Cationic resin	SunDec SC05, then a cationic Sunfloc
Anti-redeposition in detergents and cleaners	Anionic	SunRedep SC03 / SC10

HQ or MQ?

HQ grades carry a full specification (molecular weight, charge density, residual acrylamide, insolubles, particle size, viscosity, recommended working concentration) and come in 25 kg bags. MQ grades are specified on bulk density, pH and maximum use concentration and come in 10 kg bags, which suits smaller plants and trials.

2. Set a starting dose

Water or effluent	Anionic grades	Cationic grades
Clean, below 20 NTU	0.1 – 0.3 mg/L	0.2 – 0.5 mg/L
Moderate, 20 – 100 NTU	0.2 – 0.8 mg/L	0.5 – 1.5 mg/L
High, above 100 NTU	0.5 – 1.5 mg/L	1 – 3 mg/L
Industrial effluent (ETP, CETP, STP)	0.5 – 3 mg/L	1 – 5 mg/L

Kilograms per day = flow (m^3/day) × dose (mg/L) ÷ 1000. Example: 500 m^3/day at 1 mg/L uses 0.5 kg a day, about 15 kg a month.

Making up the solution

1. Fill the tank to about 80% with clean water and start the stirrer.
2. Sprinkle the granules slowly into the vortex so no lumps form.
3. Mix gently for 45–60 minutes until fully dissolved, then top up.
4. Keep make-up strength between 0.1% and 0.5% (1–5 g/L), below the grade's maximum use concentration: 5 g/L, or 10 g/L for Cationic HQ.
5. Use the solution within a day.

Where to dose

After the coagulant, in the gentle mixing zone before the clarifier. Polymer added into a rapid mixer is sheared apart; added too late, it does not mix in.

3. Run a jar test

1. Fill identical one-litre beakers with a fresh sample and stir fast.
2. Add your coagulant at plant dose and mix for about a minute.
3. Add a different polymer dose to each beaker, keeping one as a control.
4. Slow the stirrer for a few minutes and watch the flocs grow.
5. Stop, time the settling, and judge the clarity of the water above.
6. Choose the lowest dose that gives large flocs, fast settling and clear water.

For sludge, test polymer on fresh sludge in a beaker and pour it through a sieve or filter cloth; compare drainage speed, filtrate clarity and floc strength.

4. When flocs do not form

Check	What to look for
Solution	Lumps, solution older than a day, or stronger than the maximum use concentration.
Dosing point	Polymer in the rapid mixer, or too far downstream.
Charge	Flocs stay small at every dose: test the other charge.
Coagulant and pH	Alum works best around pH 6.5–7.5; PAC tolerates roughly 5–9. Re-run the jar test.
Dose	Too little leaves fines; too much can cloud the water again.
Flow	Flow above design, or pump surges, cut settling time.

5. Storage and handling

- Keep bags and drums sealed, dry and out of direct sun at 0–35 °C.
- Sunfloc shelf life: 24 months unopened. SunMac and SunDec: 24 months. SunRedep SC03: 12 months; SC10: 6 months.
- Wet polyacrylamide is very slippery: sweep dry spills and wash the area afterwards.
- Wear gloves and goggles, and a dust mask in dusty conditions. Keep away from strong oxidisers.
- See each product's SDS for first aid, fire-fighting and disposal.

6. Key HQ specifications

Property	Sunfloc Anionic HQ	Sunfloc Cationic HQ
Molecular weight	Very high	High
Charge density	Medium	Medium
Total solid content	88.0 – 100.0 %	90.0 – 100.0 %
Residual acrylamide	0 – 999 ppm	0 – 999 ppm
pH (5 g/L solution)	5.0 – 8.0	2.5 – 4.5
Recommended working concentration	3 g/L	4 g/L
Maximum use concentration	5 g/L	10 g/L
Pack	25 kg bags	25 kg bags

Full specification sheets and SDS for every product: www.surajchemicals.in/quality-and-documents. Free jar test on your sample; quotes within 1 business hour, Mon–Sat 10:00–19:00.

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