



## PRODUCT SPECIFICATION

Flow movement	Hybrid axial/radial
Flow direction	Up/Down
Weight	1.30 ± 0.25 g
Viscosity range	1-1500 cP
RPM range	100-1100 RPM
Volume range	10 - 30 mL
Dimension	Ø 9 x 25 mm

## SPP-01

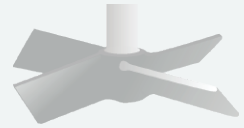


Preferred vessel:



## HIGH TURNOVER DESIGN

**Reference impeller :**  
Pitched-blade paddle



**Application include mixing of:**

- Solid catalysts
- Powder in resins, paints, and creams
- Powdered flocculants

## MATERIAL TECHNICAL DATA

Shell material	polyethylene naphthalate (PEN)
Application temperature	-60 to 155°C
Color	white
Coefficient of friction	0.12
Hydrolysis resistance	200 hours
Compliance	FDA food contact, USP <87>
Magnet material	SmCo permanent
Remanence (Br)	9,800~11,000 Gs
Sterilization	gamma, steam, EtOH

## PRODUCT HIGHLIGHT



Shell made of PEN to reduce our dependency on PTFE & PFAS



Food contact safe



No cell toxicity, bio-inert



Non-hazardous materials



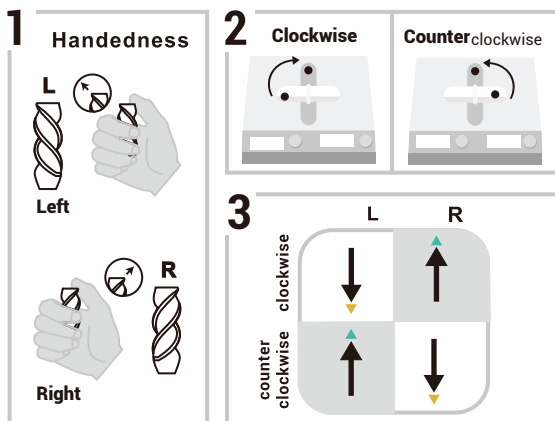
Estimated carbon footprint of PEN is 3.4 kg CO<sub>2</sub> eq/kg



Recyclable with PET bottle

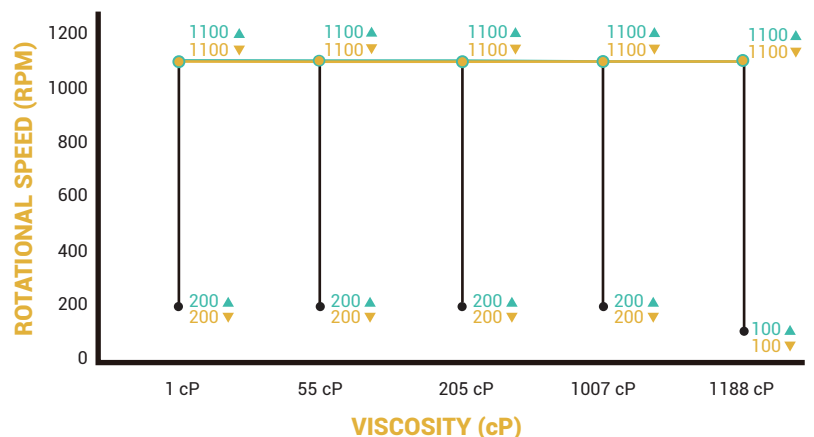
## FLOW DIRECTION SETTING

The up/down flow direction depends on the spin direction of the plate and the handedness of the product.



## RECOMMENDED OPERATING RANGE

— Optimized RPM for DOWN flow    — Optimized RPM for UP flow    | Operational RPM range



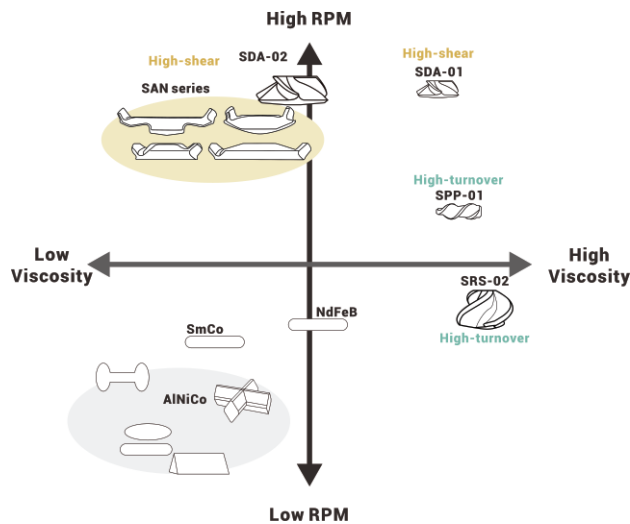
# CHEMICAL RESISTANCE CHART

	PEN	PVDF	PTFE		PEN	PVDF	PTFE
Acetic acid (10%)	A	A	A	Hydrogen peroxide (30%)	A	A	A
Acetic acid (40%)	A	A	A	Isopropyl alcohol (IPA)	A	A	A
Acetone	B	D	A	Methanol	A	A	A
Ammonium chloride (25%)	A	A	A	Methyl ethyl ketone (MEK)	A	D	A
Benzene	B	A	A	Nitric acid (10%)	A	A	A
Chloroform	C	A	A	Nitric acid (20%)	A	A	A
Cyclohexane	A	A	A	Nitric acid (67%)	D	A	A
Cyclohexanol	A	A	A	Phosphoric acid (10%)	A	B	A
Calcium chloride (10%)	A	A	A	Phosphoric acid (85%)	D	B	A
Chromic acid (10%)	A	A	A	Potassium hydroxide (10%)	A	A	A
Citric acid	A	A	A	Potassium hydroxide (30%)	B	A	A
Diethyl ether	A	A	A	Sulfuric acid (10%)	A	A	A
Dimethyl sulfoxide (DMSO)	C	C	A	Sulfuric acid (30%)	C	A	A
Dimethyl formamide (DMF)	C	D	A	Sulfuric acid (>80%)	D	A	A
Ethanol	A	A	A	Sodium acetate (40%) sol.	A	A	A
Ethyl acetate	A	D	A	Sodium chloride (sat.) (32%)	A	A	A
Ethylene diamine	C	B	A	Sodium bicarbonate (sat.)	A	A	A
Ethylene glycol	A	A	A	Sodium hydroxide (10%) sol.	A	A	A
Formaldehyde (40%)	A	A	A	Sodium hydroxide (30%) sol.	A	C	A
Formic acid (10%)	A	A	A	Sodium hypochlorite	A	A	A
Formic acid (30%)	C	B	A	Styrene (monomer)	A	A	A
Gasoline	A	A	A	Tetrahydrofuran (THF)	B	B	A
Glycerol	A	A	A	Toluene	A	A	A
Heptane	A	A	A	Triethanolamine	C	A	A
Hexane	A	A	A	Vinyl chloride (monomer)	A	A	A
Hydrobromic acid (10%)	A	A	A	Xylene	A	A	A
Hydrobromic acid (47%)	A	A	A				
Hydrochloric acid (10%)	A	A	A				
Hydrochloric acid (37%)	A	A	A				
Hydrofluoric acid (5%)	A	A	A				
Hydrofluoric acid (50%)	D	B	A				

Resistance at 23°C, immersed for 30 days  
 Ranking definition:  
 A: weight change <1%, tensile > 95%  
 B: weight change between 1~10%, tensile > 75%  
 C: weight change >10%, tensile <75%  
 D: dissolved or swelled

## SELECTION MATRIX

type of magnetic stir bars categorized by performance toward various speeds and viscosities.



## PRECAUTION

### Hazard Identification:

Not classified as hazardous according to OSHA or GHS regulations.  
 Avoid exposure to DMSO, DMF,  $\text{CHCl}_3$ ,  $\text{CCl}_4$ , and HF.

### Check compatibility:

Use chemical resistance chart as a reference.

### Conditions to Avoid:

Temperatures above 160°C.

### Storage:

Magnetic stir bars should be stored in pairs to maintain their magnetic strength, away from steel or iron surfaces and other magnetic fields.  
 Keep them at ambient temperatures to avoid thermal stress, and handle carefully to prevent mechanical damage.

### Disposal Considerations:

PEN (Polyethylene Naphthalate) can be recycled alongside PET (Polyethylene Terephthalate). Recycled as much as possible with PET or through incineration.