

PRODUCTION TESTING & FLOWBACK PRODUCT

TETRA SANDSTORM ADVANCED CYCLONE TECHNOLOGY

Increase the capture of frac sand and solids with advanced hydrocyclone technology.

OVERVIEW

The TETRA SandStorm advanced cyclone technology is a high efficiency hydrocyclone designed to increase the frac sand and solids capture with higher efficiency than traditional sand separators and cyclonic sand traps. Our proprietary design provides centrifugal action to accelerate and capture smaller particles while remaining under erosive velocities of the multiphase flow, with no flow restriction.

FEATURES

- ▶ High efficiency hydrocyclone technology.
- ▶ Modular design (2", 3" 4" pipe).
- ▶ Designed to API 6A – 10M psig.
- ▶ Sour service per NACE MR0175 / ISO 15156.

BENEFITS

- ▶ Increased efficiency over traditional sand separators – over 95% capture rate.
- ▶ Low pressure drop.
- ▶ High capacity containment.
- ▶ No line restriction.
- ▶ No moving parts.



DESIGN PARAMETERS

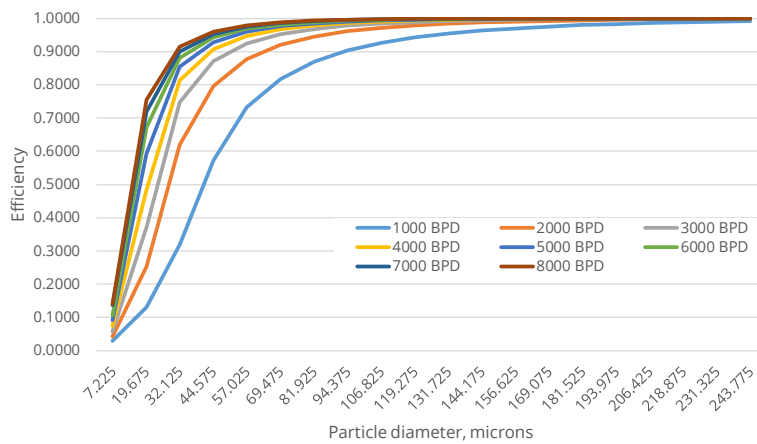
MAWP	10,000 psig	15,000 psig
Design Code	API 6A	API 6A
Design Temperature Range	P+X, 20°F to 350°F (-7°C to 177°C)	P+U, 20°F to 250°F (-7°C to 121°C)
Material Class	EE-NL	DD-NL
PSL	Level 3	Level 3
Service	Sour Service per NACE MR0175	Sour Service per NACE MO0175
Vessel Capacity (frac Sand)	533 lb (9212 in ³) / 942 Lb (16268 in ³)	1022 lb (17677 in ³)
Inlet Connection	3 -1/16 10M per API 6A	4 -1/16 15M per API 6A
Outlet Connection	3 -1/16 10M per API 6A	4 -1/16 15M per API 6A
Flush Connection	3 -1/16 10M per API 6A	3 -1/16 15M per API 6A
Dimensions	56" L x 60" W x 142" H	90" L x 60" W x 169" H



PERFORMANCE METRICS

Barrels Per Day	1000	2000	3000	4000	5000	6000	7000	8000
Pressure Drop	0.33 psi	1.82 psi	5.25 psi	11.40 psi	21.03 psi	34.94 psi	53.89 psi	78.67 psi
Separation Efficiency	86.14%	89.81%	91.42%	92.46%	93.27%	93.86%	94.31%	94.58%
Inlet Liq. Velocity	2.78 ft/s	5.52 ft/s	8.26 ft/s	10.99 ft/s	13.73 ft/s	16.47 ft/s	19.21 ft/s	21.94 ft/s

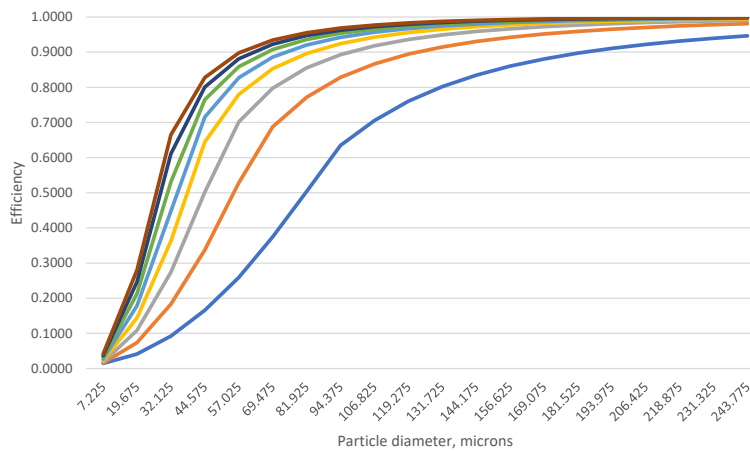
2" Configuration / 10,000 psig / Efficiency Curves for Crude Oil



PERFORMANCE METRICS

Barrels Per Day	1000	2000	3000	4000	5000	6000	7000	8000
Pressure Drop	0.05 psi	0.24 psi	0.65 psi	1.37 psi	2.47 psi	4.04 psi	6.16 psi	8.91 psi
Separation Efficiency	73.86%	80.25%	83.38%	85.39%	86.73%	87.78%	88.66%	89.34%
Inlet Liq. Velocity	1.13 ft/s	2.24 ft/s	3.34 ft/s	4.45 ft/s	5.56 ft/s	6.67 ft/s	7.78 ft/s	8.89 ft/s

3" Configuration / 10,000 psig / Efficiency Curves for Crude Oil



Contact us to learn more at: www.onetetra.com

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