

HyPrene

| Process Oils

Ergon's HyPrene process oils are produced to exact specifications and designed for a variety of applications including: tire oils, plasticizers, extenders, adhesives, defoamers and rubber compounding. These naphthenic and paraffinic products have low pour points, good solvency power, low odor and excellent color stability properties.

ERGON

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Ergon Refining, Inc.

Ergon Refining Inc. (ERI) built the Vicksburg, Mississippi, refinery in 1978. With a process capacity of 26,500 barrels (3,800 metric tons) per calendar day of crude oil, the refinery utilizes two high-pressure hydrotreaters and an advanced Residual Oil Supercritical Extraction (ROSE®) de-asphalting unit to refine a range of naphthenic and paraffinic specialty oils from globally sourced, low viscosity-gravity constant crude oil. ERI is the leading naphthenic specialty oil refiner in the world and maintains ISO 9001 quality and ISO 14001 environmental management accreditations.

Ergon - West Virginia, Inc.

Ergon - West Virginia Inc. (EWV) acquired the refinery at Newell, West Virginia, from Quaker State in July 1997. Originally built in 1972, current process capacity exceeds 22,300 barrels (3,100 metric tons) per calendar day of crude oil. In addition to traditional fuel products, the Newell refinery utilizes high-pressure hydrotreating and Methyl Ethyl Ketone (MEK) dewaxing technologies to produce approximately 6,000 barrels (875 metric tons) per day of highly refined specialty petroleum products from virgin Appalachian grade crude oil. EWV maintains ISO 9001 quality management accreditation.

Global Distribution

Following production and certification, both ERI and EWV store the specialty products near the refinery and distribute them via barge, rail and truck directly to customers and bulk storage terminals around the world.

Ergon, Inc.

Headquartered in Flowood, Mississippi, with international operations based out of Belgium, Ergon and its subsidiaries comprise a strategic collection of petroleum-related enterprises founded in 1954 by Leslie B. Lampton. Today, Ergon operates as a sophisticated crude oil processor, transporter and marketer of refined products. Employing over 4,200 people, Ergon maintains a network of strategically located terminals, allowing for efficient distribution worldwide. Ergon markets products in more than 100 countries and remains committed to increasing our global presence through strong relationships and continued investments across all regions.

ERGON

ergonspecialtyoils.com

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**INNOVATIVE
SOLUTIONS
FROM A
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HyPrene Naphthenic Process Oils

Typical Property Values*

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Process Oils

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TEST DESCRIPTION	TEST METHOD	40	60	100	L150	L500	L600	L750	L1200	L2000	V175BS
Physical Properties											
Viscosity, SUS at 100°F (37.8°C)	ASTM D2161	38	60	118	157	526	614	774	1246	2139	4995
Viscosity, SUS at 210°F (98.9°C)	ASTM D2161	31	34	39	41	56	58	64	77	100	204
Viscosity, cSt at 40°C (104°F)	ASTM D445	4	10	22	30	99	115	144	230	390	912
Viscosity, cSt at 100°C (212°F)	ASTM D445	1.5	2.4	3.8	4.4	8.7	9.3	10.9	14.3	19.7	41.8
API Gravity, 60°F (15.6°C)	ASTM D1250	31.4	28.3	24.6	24.3	22.9	22.9	22.5	22.1	21.6	23.6
Specific Gravity, 60°F (15.6°C)	ASTM D4052	0.869	0.885	0.907	0.909	0.917	0.917	0.918	0.922	0.924	0.912
Viscosity-Gravity Constant	ASTM D2501	-	0.856	0.867	0.866	0.858	0.856	0.856	0.853	0.849	0.816
Density, lbs/gal at 60°F	ASTM D1250	7.234	7.373	7.550	7.566	7.633	7.633	7.652	7.674	7.699	7.596
Density at 15.6°C, g/cm ³	ASTM D1250	0.868	0.885	0.906	0.908	0.916	0.916	0.918	0.921	0.924	0.911
Molecular Weight	ASTM D2502	242	269	305	322	392	395	418	453	500	733
Flash Point, COC, °F (°C)	ASTM D92	245 (118)	310 (155)	345 (174)	356 (180)	431 (222)	444 (229)	443 (228)	465 (241)	508 (264)	567 (299)
Flash Point, PMCC, °F (°C)	ASTM D93	228 (109)	287 (142)	318 (159)	325 (163)	390 (199)	412 (211)	418 (215)	428 (220)	457 (236)	-
Color, ASTM	ASTM D6045	L0.5	L0.5	L0.5	L0.5	L1.0	L0.5	L2.0	L2.0	L2.0	L2.5
Pour Point, °F (°C)	ASTM D5949	-	-	-56 (-49)	-	-29 (-34)	-24 (-31)	-21 (-29)	-19 (-28)	-8 (-22)	-
Pour Point, °F (°C)	ASTM D5950	-115 (-81)	-80 (-62)	-	-47 (-44)	-	-	-	-	-	14 (-10)
Volatility, wt%, 225°F (Evap. Loss)	ASTM D972	-	27.1	11.4	8.6	1.5	1.2	0.2	0.5	0.2	0.04
Glass Transition Temperature (Tg), °C	ASTM D3418	-73	-87	-79	-70	-65	-	-61	-59	-55	-50
Chemical Properties											
Acid Number, mg KOH/g	ASTM D664	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Aniline Point, °F (°C)	ASTM D611	152 (66)	170 (77)	170 (77)	175 (79)	190 (88)	194 (90)	196 (91)	202 (94)	209 (98)	251 (122)
Sulfur, ppm	ASTM D4294	7	-	293	289	373	297	612	621	795	518
Sulfur, ppm	ASTM D7212	6	34	-	-	-	-	-	-	-	-
Refractive Index, 20°C (68°F)	ASTM D1218	1.4723	1.4826	1.4946	1.4955	1.5013	1.5002	1.5038	1.5052	1.5075	1.5007
UV Absorptivity at 260 nm	ASTM D2008	0.23	0.56	1.18	1.18	2.05	1.42	3.15	3.71	4.23	2.56
Carbon Type Analysis, %	ASTM D2140										
Ca		3	5	9	9	10	8	12	12	12	6
Cn		65	50	49	48	42	44	38	37	35	28
Cp		32	46	42	43	48	48	50	51	53	66
Health and Safety Properties											
Polycyclic Aromatic Compounds, wt%	IP 346	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
Modified Ames Assay, MI	ASTM E1687	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
FDA Regulation	21 CFR 178.3620	-	PASS (C)	PASS (C)	-	-	-	-	-	-	-

*Typical Property Values presented for general reference only. Please visit ergonspecialtyoils.com for detailed Marketing Specifications. HyPrene naphthenic process oils are products of Ergon Refining, Inc. August 2023

HyPrene Paraffinic Process Oils

Typical Property Values*

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TEST DESCRIPTION	TEST METHOD	P40	P70N	P100N	P150N	P220N	P300N	P150BS
Physical Properties								
Viscosity, SUS at 100°F (37.8°C)	ASTM D2161	38	68	111	148	219	312	2472
Viscosity, SUS at 210°F (98.9°C)	ASTM D2161	31	36	40	44	49	54	148
Viscosity, cSt at 40°C (104°F)	ASTM D445	3	12	21	29	43	61	461
Viscosity, cSt at 100°C (212°F)	ASTM D445	1.3	2.8	4.2	5.1	6.6	8.4	30.2
API Gravity, 60°F (15.6°C)	ASTM D1250	42.0	33.2	34.2	33.7	33.1	32.6	26.8
Specific Gravity, 60°F (15.6°C)	ASTM D4052	0.815	0.859	0.854	0.857	0.860	0.862	0.894
Viscosity-Gravity Constant	ASTM D2501	-	0.821	0.802	0.799	0.796	0.792	0.800
Density, lbs/gal at 60°F	ASTM D1250	6.798	7.162	7.121	7.141	7.169	7.187	7.454
Density at 15.6°C, g/cm ³	ASTM D1250	0.815	0.858	0.853	0.856	0.859	0.861	0.893
Molecular Weight	ASTM D2502	-	303	366	401	445	488	731
Flash Point, COC, °F (°C)	ASTM D92	269 (132)	369 (187)	422 (217)	432 (222)	457 (236)	499 (259)	586 (308)
Flash Point, PMCC, °F (°C)	ASTM D93	246 (119)	349 (176)	403 (206)	415 (213)	433 (223)	474 (246)	-
Color, ASTM	ASTM D6045	L0.5	L0.5	L0.5	L0.5	L1.0	L1.0	L3.5
Pour Point, °F (°C)	ASTM D5949	-	-2 (-19)	1 (-17)	2 (-17)	2 (-17)	1 (-17)	18 (-8)
Pour Point, °F (°C)	ASTM D5950	11 (-12)	-	-	-	-	-	-
Volatility, wt%, 225°F (Evap. Loss)	ASTM D972	-	7.08	0.4	0.4	0.03	<0.1	<0.1
Chemical Properties								
Acid Number, mg KOH/g	ASTM D664	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Aniline Point, °F (°C)	ASTM D611	185 (85)	203 (95)	225 (107)	233 (112)	242 (117)	250 (121)	282 (128)
Sulfur, ppm	ASTM D7220	-	3	3	4	4	5	168
Sulfur, ppm	ASTM D5453	9	-	-	-	-	-	-
Refractive Index, 20°C (68°F)	ASTM D1218	1.4515	1.4705	1.4694	1.4707	1.4726	1.4739	1.4922
UV Absorptivity at 260 nm	ASTM D2008	0.29	0.12	0.10	0.10	0.11	0.10	1.98
Carbon Type Analysis, %	ASTM D2140							
Ca		7	0	0	1	0	0	5
Cn		13	40	33	31	30	28	24
Cp		80	60	67	69	70	72	71
Health and Safety Properties								
Polycyclic Aromatic Compounds, wt%	IP 346	-	<3	<3	<3	<3	<3	<3
Modified Ames Assay, MI	ASTM E1687	<1	<1	<1	<1	<1	<1	<1
FDA Regulation	21 CFR 178.3620 (C)	-	PASS	PASS	PASS	PASS	PASS	PASS

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