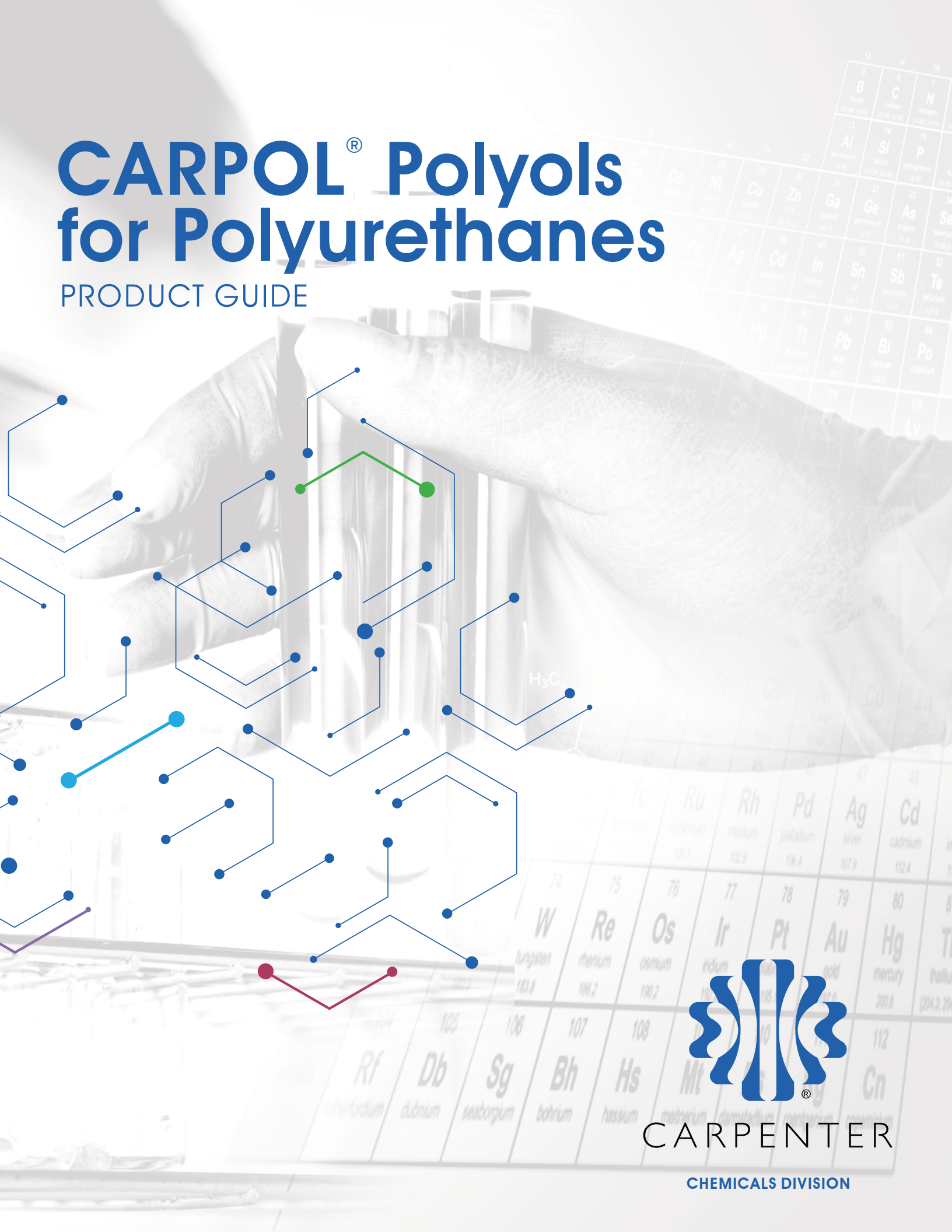
CARPOL® Polyols for Polyurethanes

PRODUCT GUIDE



CARPENTER

CHEMICALS DIVISION

CARPOL® Diols

TYPICAL PROPERTIES

	PRODUCT NAME	COMPOSITION	Approximate Functionality	Hydroxyl Number mg KOH/g	Approximate Molecular Weight Da	Average pH	Water Content (Max) %	Viscosity at 25°C cP	Color APHA (Max)	Density at 25°C lb/gal	Renewable Content %
	PGP - 400	Propylene Glycol, Propylene Oxide	2.0	264-299	400	7.0	0.02	75	35	8.30	-
	PGP - 1000	Propylene Glycol, Propylene Oxide	2.0	107-117	1,000	7.0	0.02	150	35	8.28	-
	PGP - 2000	Propylene Glycol, Propylene Oxide	2.0	54-57.5	2,000	7.0	0.02	300	35	8.33	-
	PGP - 3000	Propylene Glycol, Propylene Oxide	2.0	35-39	3,000	7.0	0.02	600	35	8.47	-
	PGP - 4000	Propylene Glycol, Propylene Oxide	2.0	26-30	4,000	7.0	0.02	890	35	8.33	-
REACTIVE	**PGP - 2012**	**Propylene Glycol, Propylene Oxide, 12% Ethylene Oxide cap**	**2.0**	**54-58**	**2,000**	**7.0**	**0.04**	**317**	**35**	**8.33**	**-**
REACTIVE	**PGP - 2528**	**Propylene Glycol, Propylene Oxide, 28% Ethylene Oxide cap**	**2.0**	**42-47**	**2,500**	**7.0**	**0.04**	**450**	**70**	**8.68**	**-**
REACTIVE	**PGP - 2740**	**Propylene Glycol, Propylene Oxide, 40% Ethylene Oxide cap**	**2.0**	**40-44**	**2,700**	**7.0**	**0.04**	**470**	**70**	**8.76**	**-**
REACTIVE	**PGP - 2816**	**Propylene Glycol, Propylene Oxide, 16% Ethylene Oxide cap**	**2.0**	**38-42**	**2,800**	**7.0**	**0.04**	**500**	**35**	**8.76**	**-**
REACTIVE	**PGP - 3815**	**Propylene Glycol, Propylene Oxide, 15% Ethylene Oxide cap**	**2.0**	**28-31**	**3,800**	**7.0**	**0.04**	**660**	**35**	**8.60**	**-**
REACTIVE	**PGP - 4025**	**Propylene Glycol, Propylene Oxide, 25% Ethylene Oxide cap**	**2.0**	**26-30**	**4,000**	**7.0**	**0.04**	**1,000**	**35**	**8.60**	**-**

All diols may be acidified to a nominal pH of 5 or 6 upon request

CARPOL® Triols

TYPICAL PROPERTIES

	PRODUCT NAME	COMPOSITION	Approximate Functionality	Hydroxyl Number mg KOH/g	Approximate Molecular Weight Da	Average pH	Water Content (Max) %	Viscosity at 25°C cP	Color APHA (Max)	Density at 25°C lb/gal	Renewable Content %
	GP - 700	Glycerin, Propylene Oxide	3.0	230-250	700	7.0	0.02	270	35	8.56	10-15
	GP - 1000	Glycerin, Propylene Oxide	3.0	160-176	1,000	7.0	0.02	250	35	8.55	5-10
	GP - 1500	Glycerin, Propylene Oxide	3.0	106-118	1,500	7.0	0.02	275	35	8.48	5-10
	GP - 3000	Glycerin, Propylene Oxide	3.0	54-58	3,000	7.0	0.02	500	35	8.36	<5
	GP - 4000	Glycerin, Propylene Oxide	3.0	39-42	4,000	7.0	0.02	700	35	8.36	<5
	GP - 3008	Glycerin, Propylene Oxide, 8% Ethylene Oxide located internally	3.0	54-58	3,000	7.0	0.04	500	35	8.36	<5
	GP - 3510	Glycerin, Propylene Oxide, 10% Ethylene Oxide located internally	3.0	45.5-48.5	3,500	7.0	0.04	500	35	8.52	<5
REACTIVE	**GP - 725**	**Glycerin, Propylene Oxide, 25% Ethylene Oxide cap**	**3.0**	**230-250**	**700**	**7.0**	**0.04**	**250**	**35**	**8.36**	**10-15**
REACTIVE	**GP - 4520**	**Glycerin, Propylene Oxide, 20% Ethylene Oxide cap**	**3.0**	**34.1-37.3**	**4,500**	**7.0**	**0.04**	**833**	**35**	**8.59**	**<5**
REACTIVE	**GP - 5015**	**Glycerin, Propylene Oxide, 15% Ethylene Oxide cap**	**3.0**	**32-36**	**5,000**	**7.0**	**0.04**	**840**	**35**	**8.43**	**<5**
REACTIVE	**GP - 5171**	**Glycerin, Propylene Oxide, 71% Ethylene Oxide**	**3.0**	**33-38**	**5,000**	**7.5**	**0.04**	**1,200**	**70**	**8.41**	**<5**
REACTIVE	**GP - 6015**	**Glycerin, Propylene Oxide, 15% Ethylene Oxide cap**	**3.0**	**26-30**	**6,000**	**7.0**	**0.04**	**1,100**	**35**	**8.44**	**<5**
REACTIVE	**GP - 6307**	**Glycerin, Propylene Oxide, 7% Ethylene Oxide**	**3.0**	**26-29**	**6,300**	**7.0**	**0.04**	**1,180**	**35**	**8.49**	**<5**
REACTIVE	**GSP - 7216**	**Mixed Starter, Propylene Oxide, Ethylene Oxide cap**	**4.2**	**29.5-32.5**	**7,200**	**6.5**	**0.05**	**1,250**	**100**	**8.85**	**<5**

All triols may be acidified to a nominal pH of 5 or 6 upon request

Product Nomenclature CARPOL® GP - 6015

- GP → REGISTERED TRADENAME
- 6 → MOLECULAR WEIGHT
- 1 → ETHYLENE OXIDE CONTENT
- 5 → INITIATOR

Product Nomenclature CARPOL® GSP - 355

- GSP → REGISTERED TRADENAME
- 35 → HYDROXYL NUMBER
- 5 → INITIATOR

PG	Propylene Glycol	**TEAP**	Triethanol Amine	**MX**	Mannich (Phenol)
GP	Glycerin	**EDAP**	Ethylene Diamine	**SP**	Sucrose
SPA	Sucrose/Amine DEOA	**GSP**	Glycerin/Sucrose	**PES**	Polyester

CARPOL® Amine Polyols

TYPICAL PROPERTIES

PRODUCT NAME	COMPOSITION	Approximate Functionality	Hydroxyl Number mg KOH/g	Approximate Molecular Weight Da	Average pH	Water Content (Max) %	Viscosity at 25°C cP	Color Gardner (Max)	Density at 25°C lb/gal	Renewable Content %	Total Amine Value mg KOH/g
SPA-357	Sucrose, Diethanol Amine, Propylene Oxide	5.5	335-365	880	10.3	0.08	2,500	12	8.99	10-15	49.0
SPA-530	Sucrose, Diethanol Amine, Propylene Oxide	5.5	520-540	580	11.0	0.08	11,000	12	9.16	20-25	70.0
TEAP-265	Triethanol Amine, Propylene Oxide	3.0	625-645	265	11.0	0.10	465	7	9.00	-	213.0
EDAP-770	Ethylene Diamine, Propylene Oxide	4.0	757-783	290	11.0	0.05	56,000	2	8.64	-	384.0
EDAP-800	Ethylene Diamine, Propylene Oxide, Ethylene Oxide	4.0	750-815	280	11.0	0.05	16,000	2	8.82	-	404.0

CARPOL® Sucrose Polyols

TYPICAL PROPERTIES

PRODUCT NAME	COMPOSITION	Approximate Functionality	Hydroxyl Number mg KOH/g	Approximate Molecular Weight Da	Average pH	Water Content (Max) %	Viscosity at 25°C cP	Color Gardner (Max)	Density at 25°C lb/gal	Renewable Content %	Total Amine Value mg KOH/g
GSP-280	Glycerin, Sucrose, Propylene Oxide, Ethylene Oxide	7.0	270-290	1,400	7.0	0.08	2,600	7	9.22	25-30	n/a
GSP-355	Glycerin, Sucrose, Propylene Oxide	4.5	350-370	800	7.0	0.08	3,700	7	9.11	25-30	n/a
GSP-370	Glycerin, Sucrose, Propylene Oxide	7.0	360-380	1,060	10.0	0.10	27,000	12	9.32	25-30	1.0
GSP-520	Glycerin, Sucrose, Propylene Oxide	5.0	510-530	540	10.0	0.10	34,000	12	9.08	25-30	2.0
SP-477	Sucrose, Propylene Oxide	5.0	450-490	600	7.0	0.10	33,000	7	9.42	25-30	1.0

CARPOL® Mannich Polyols

TYPICAL PROPERTIES

PRODUCT NAME	COMPOSITION	Approximate Functionality	Hydroxyl Number mg KOH/g	Approximate Molecular Weight Da	Average pH	Water Content (Max) %	Viscosity at 25°C cP	Color Gardner (Max)	Density at 25°C lb/gal	Renewable Content %	Total Amine Value mg KOH/g
MX-425	Mannich Base, Propylene Oxide, Ethylene Oxide	4.0	415-435	530	11.0	0.10	5,200	6	9.30	-	147.5
MX-470	Mannich Base, Propylene Oxide, Ethylene Oxide	4.0	450-490	480	11.0	0.10	10,000	6	9.35	-	165.5

CARPOL® Aromatic Polyester Polyols

TYPICAL PROPERTIES

PRODUCT NAME	COMPOSITION	Approximate Functionality	Hydroxyl Number mg KOH/g	Approximate Equivalent Weight Da	Acid Value (Max) mg KOH/g	Water Content (Max) %	Viscosity at 25°C cP	Density at 25°C lb/gal	Aromatic Content %	Recycled Content %
PES-265	Aromatic Acid, Mixed Glycol	2.3	255-275	212	2.0	0.20	9,500	10.43	38	44
PES-295	Aromatic Acid, Mixed Glycol	2.4	295-315	184	2.0	0.20	10,500	10.43	38	47
PES-305	Aromatic Acid, Mixed Glycol	2.2	285-315	187	1.5	0.20	5,000	10.35	36	43
PES-352	Aromatic Acid, Mixed Glycol	2.2	335-365	160	2.0	0.20	3,000	10.35	34	41
PES-375	Aromatic Acid, Mixed Glycol	3.0	360-380	152	2.0	0.20	6,500	10.43	32	37

SAMPLES & INFORMATION

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800.260.5373

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chemical.division@carpenter.com

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chemdivintl@carpenter.com

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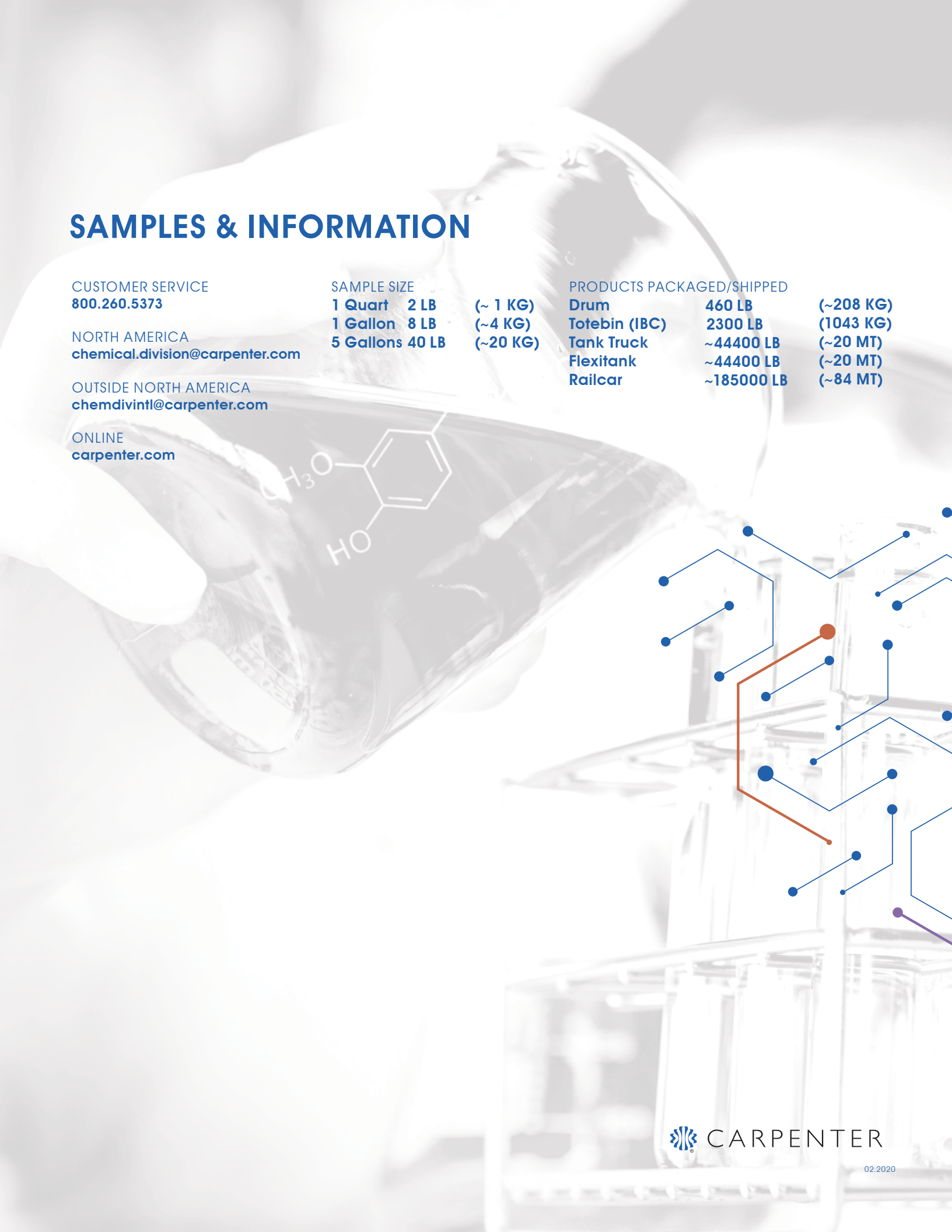
SAMPLE SIZE

1 Quart	2 LB	(~ 1 KG)
1 Gallon	8 LB	(~4 KG)
5 Gallons	40 LB	(~20 KG)

PRODUCTS PACKAGED/SHIPPED

Drum	460 LB	(~208 KG)
Totebin (IBC)	2300 LB	(1043 KG)
Tank Truck	~44400 LB	(~20 MT)
Flexitank	~44400 LB	(~20 MT)
Railcar	~185000 LB	(~84 MT)



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