



Material Technologies

For Rubber, Plastics, Adhesives, Sealants & Specialty Coatings

AEP

Smooth Blown PE Film

AKZONOBEL

PERKADOX® Organic Peroxides

TRIGONOX® Organic Peroxides

KETJENBLACK® Conductive Carbon Black

BIRLA CARBON

ASTM Carbon Blacks

EP Enhanced Performance Carbon Black

ULTRA® Rubber Blacks

BUDENHEIM USA, INC.

Phosphorus & Nitrogen Flame Retardants

CENOBAR

BLANC FIXE Synthetic Barium Sulfate

Lithopone

CENOSTAR CORPORATION

CENOSPHERES

GLASS BUBBLES

CHARTER NEX FILMS

Cast Embossed PE Films

CHASE CORPORATION

DUALITE® E Polymeric Microspheres

DUALITE® U Polymeric Microspheres

CHEM-TREND

MONO-COAT® Mold Release Agents

CHEM-TREND PM® Mold Release Agents

DAISO

EPICHLONER® ECO

DEXTER-RUSSELL

Industrial Knives & Tools

DOW CHEMICAL

THIXON® Solvent-Based Adhesives

MEGUM® Solvent & Water-Based Adhesives

ROBOND® Water-Based Adhesives

MOR-FLOCK® Flocking Adhesives

DRASNER

LOMEL® Low Melt Batch Inclusion Bags

DUPONT

KEVLAR® Aramid Pulp and Staple

ELKEM MATERIALS

SIDISTAR® Silicon Dioxide

EVERHARD

EVERHARD® Roller & Stitchers

GLASSVEN

RUBBERSIL® Precipitated Silica

RUBBERSIL® Sodium Aluminosilicate

HEXPOL COMPOUNDING

PROFLEX® NBR/PVC

HOLLAND COLOURS

Holcosil – LSR Silicone Colorant

HOLLYFRONTIER

SUNPAR® Paraffinic Process Oil

SUNDEX® Aromatic Process Oil

IMERYS TALC

MISTRON Talc®

LAWTER, INC.

FILTREZ™ Resins

LUBRIZOL

PEARLCOAT® TPU

PEARLBOND™ TPU

PEARLSTICK™ TPU

MARTIN MARIETTA

ELASTOMAG® Magnesium Oxide

MAGSHIELD® Magnesium Hydroxide

NORAC

NORSTAB® Ca/Zn Heat Stabilizers

COAD® Metallic Stearates

ESTER® Lubricant & Blends

PERFORMANCE CHEMICALS, LLC

CALZIN® Strip & Slab dip

QUALICE, LLC

CPAR Chlorinated Paraffin

CPAR 70 Solid

RAIN CARBON, INC.

NOVARES® C9 Hydrocarbon Resins

NOVARES® C-I Resins

NOVARES® Liquid Modifying Resins

RUETASOLV® High Boiling Point Solvent

RENKERT OIL

PARAMOUNT® Group II Paraffinic Oils

RJ MARSHALL

H-TEC™ ATH

C-TEC™ Zinc Stannate

C-TEC™ Zinc Borate

ROYAL

ARAMID BLEND – ROY-TUFF

RHEOMETER Test Film

ROY CAL H Ground Oyster Shell

RUBBERMAKERS Sulfur

ROYAL BRANDED CLAYS – Hard & Soft

SAN JOAQUIN

RAFFEX® Aromatic Process Oils

RAFFENE® Napthenic Process Oils

HYNAP® Hydrotreated Napthenic Oils

SHIRAIISHI CALCIUM

VISCOLITE® Precipitated Calcium Carbonate

HAKUENKA® Precipitated Calcium Carbonate

VISCOEXCEL® Precipitated Calcium Carbonate

WHITON JP® Food Grade PCC

SI GROUP

Curing & Tackifying Phenolic Resins

ETHANOX® Antioxidants

SOLTEX

SOLTEX® Polybutene

SOLVAY SPECIALTY POLYMERS USA

TECNOFLO® FKM & FFKM

POLYMIST® PTFE

ALGOFLON® PTFE

SONNEBORN

SONNEBORN® Petrolatum

SPECIALTY MINERALS

Dry & Wet Ground Calcium Carbonate

THE INTERNATIONAL GROUP

IGI Paraffin Wax

TOKUYAMA

REOLOSIL® Fumed Silica

TORAY

THIOKOL® Liquid Polysulfide

CTPI® Cure Retarder

TRANSCONTINENTAL PACKAGING

DARTEK® Cure Wrap Tape

DARTEK® Composite Film

TRI-iso TRYLINE

Titanium Dioxide

WACKER CHEMICAL CORPORATION

ELASTOSIL® HCR Solid Silicone Rubber

ELASTOSIL® LR Liquid Silicone Rubber

ZOCHEM, INC.

ZOCO USP Zinc Oxide

ZOCO Tech Grade Zinc Oxide

HM ROYAL INC.
We're Material People

H.M. Royal of California, Incorporated

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6880 8th Street, Buena Park, CA 90620



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PARTICLE SIZE CONVERSION TABLE					
SEIVE MESH ¹	MICRON	MILLI-METER	INCH	MIL	HEGMAN FINENESS ²
	0.0	0.000	0.0000	0.00	8.0
	6.4	0.006	0.0003	0.25	7.5
1200	10.2	0.010	0.0004	0.40	
	12.7	0.127	0.0005	0.50	7.0
	19.1	0.019	0.0008	0.75	6.5
625	20.3	0.020	0.0008	0.80	
	25.4	0.025	0.0010	1.00	6.0
	30.5	0.031	0.0012	1.20	
	31.8	0.032	0.0125	1.25	5.5
400	38.1	0.038	0.0015	1.50	5.0
	40.6	0.041	0.0016	1.60	
325	44.5	0.045	0.0018	1.75	4.5
	50.8	0.051	0.0020	2.00	4.0
270	53.3	0.053	0.0021	2.10	
	57.2	0.057	0.0023	2.25	3.5
230	61.0	0.061	0.0024	2.40	
	63.5	0.064	0.0025	2.50	3.0
	69.9	0.070	0.0028	2.75	2.5
	71.1	0.071	0.0028	2.80	
200	73.7	0.074	0.0029	2.90	
	76.2	0.076	0.0030	3.00	2.0
	81.3	0.081	0.0032	3.20	
	82.6	0.083	0.0033	3.25	1.5
170	88.9	0.089	0.0035	3.50	1.0
	95.3	0.095	0.0038	3.75	0.5
140	101.6	0.102	0.0040	4.00	0.0
120	125.0	0.125	0.0049	4.90	
100	149.0	0.149	0.0059	5.90	
80	177.0	0.177	0.0070	7.00	
70	210.0	0.210	0.0083	8.30	

1) STANDARD SIEVE MESH: ASTM E.11-81/SO565. The sieve numbers are the approximate number of openings per linear inch.
 2) HEGMAN FINENESS: ASTM D1210-96. Fineness of dispersion of pigment-vehicle systems by Hegman-type gage.

SIZE & SCALE			
NAME	SYMBOL	VALUE	EQUIVALENT (in METERS)
picometer	pm	10 ⁻¹²	0.000 000 000 001
nanometer	nm	10 ⁻⁹	0.000 000 001
micrometer	µm	10 ⁻⁶	0.000 001
millimeter	mm	10 ⁻³	0.001
centimeter	cm	10 ⁻²	0.01
decimeter	dm	10 ⁻¹	0.1
meter	m	1	1
decameter	dam	10	10
hectometer	hm	10 ²	100
kilometer	km	10 ³	1 000
megameter	Mm	10 ⁶	1 000 000
gigameter	Gm	10 ⁹	1 000 000 000
tetrameter	Tm	10 ¹²	1 000 000 000 000

CONVERSION FORMULAS

Mass

- 1 Metric Ton (t) = 2204.6 pounds lb
- 1 Metric Ton (t) = 1000 kilograms kg
- 1 kilogram (kg) = 2.205 pounds lb
- 1 pound (lb) = 0.454 kilograms kg
- 1 Short Ton (tn) = 2,000 pounds lb

Length

- 1 meter (m) = 39.37 inches in
- 1 meter (m) = 3.281 feet ft
- 1 mil (mil) = 25.4 micron µm

Temperature

°C = (°F - 32) / 1.8
 °F = (°C * 1.8) + 32

SPECIFIC GRAVITY/DENSITY CONVERSION				
	g/cc	kg/m ³	lbs/gal	lbs/cu-ft
g/cc	1	1000	8.3454	62.43
kg/m ³	0.0010	1	0.0083	0.0624
lbs/gal	0.1198	119.83	1	7.4805
lbs/cu-ft	0.0160	16.018	0.1337	1
	g/cc	kg/m³	lbs/gal	lbs/cu-ft

Read across, then down. Example, 1 g/cc (red column) = 1000 (2nd numeric column) kg/m³ (blue bottom header). NOTE: cm³ = g/cc

HARDNESS SCALES COMPARISON																										
SHORE A	20	30	40	50	60	70	80	90	95	SHORE D	45	55	65	75	85	ROCKWELL R	50	70	90	100	110	110	120	130	140	150

POLYMERS	
by Decreasing Polarity	
Polymer	Abbr.
MORE POLAR	
Nylon	PA
Polysulfide	T
Polyurethane	PU
Nitrile (High ACN)	NBR
Epoxy	EP
Polycarbonate	PC
Polyvinyle Acetate	PVA
Nitrile (Med ACN)	NBR
Acrylic Rubber	ACM
Epichlorihydrin	ECO
Chlorosulfonated	CSM
Polyvinyl Chloride	PVC
Polystyrene	PS
Polychloroprene	CR
Nitrile (Low ACN)	NBR
Chlorinated PE	CPE
Styrene-Butadiene Rubber	SBR
Polybutadiene	BR
Natural Rubber	NR
Halo Butyl	HIIR
Ethylene-Propylene Diene	EPDM
Ethylene-Propylene Rubber	EPR
Butyl Rubber	IIR
Fluoroelastomer	FKM
Silicone	Q
LESS POLAR	

