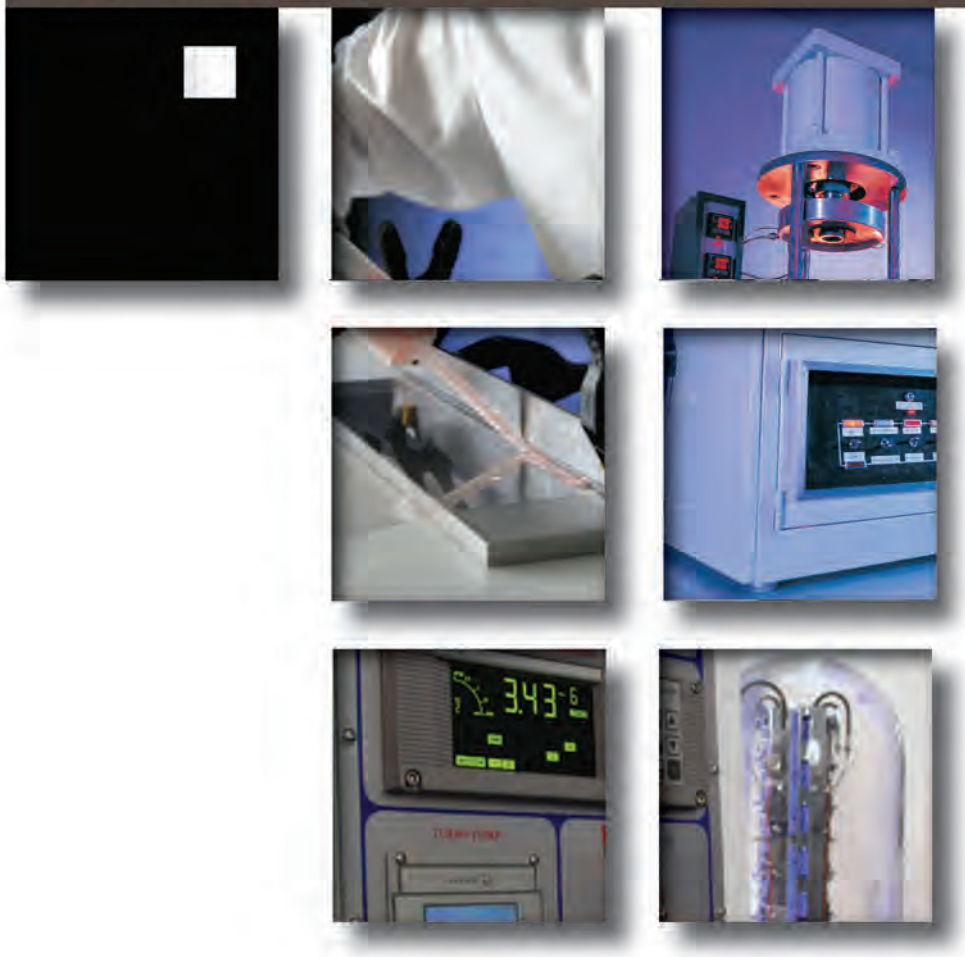
Material Testing Services



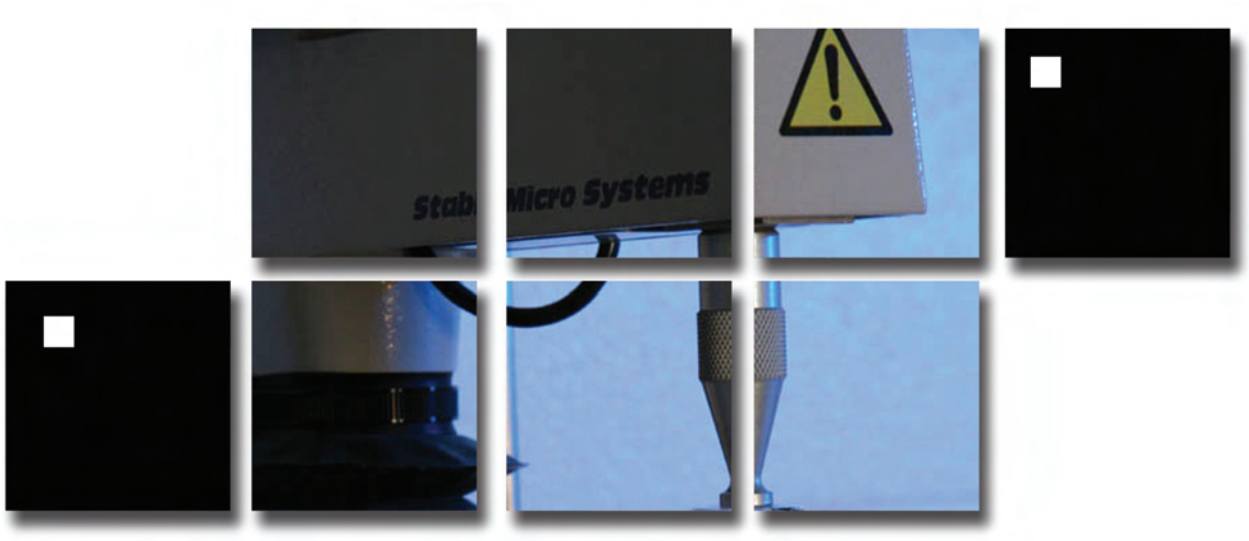
MATERIAL TESTING SERVICE

Properties	Test	NuSil Test Method	ASTM Test Method	Units Reported	Description / Comments
Cured Physical Properties	Durometer	NT-TM-006	ASTM D-2240	Type A Type 00 Type D As Specified	A measure of indentation hardness.
	Tensile Strength	NT-TM-007	ASTM D-412; ASTM D-882	psi	A measure of tensile strength for elastomeric and plastic materials.
	Tear Strength	NT-TM-009	ASTM D-624	ppi	A determination of tear strength for elastomeric and plastic materials.
	Elongation	NT-TM-007	ASTM D-412; ASTM D-882	%	The percent elongation at the point of material failure.
	Tensile Modulus	NT-TM-007	ASTM D-412; ASTM D-882	psi	The determination of tensile strength at specified elongation.
	Tensile Set	NT-TM-066	ASTM D-412	%	The extension remaining after a specimen has been stretched and allowed to retract in a specified manner, expressed as a percentage of the original length.
	Thermal Conductivity	NT-TM-101	ASTM E-1530	w/m·K (cal / cm·sec°C)	A measure of thermal transmission properties by means of guarded heat flow meter technique. Mean test temperatures range from 0 - 300°F (150°C).
	Resilience	NT-TM-062	ASTM D-2632	%	A measure of dynamic rebound of elastomeric materials.
	Compression Set	NT-TM-065	ASTM D-0395	Percent of original deflection	A measure of the effects of exposing cured rubber to compressive stress.
	Gel Penetration	NT-TM-011		millimeter (1/10)	A measure of penetration hardness.
	Lap Shear Strength	NT-TM-010	ASTM D-1002	psi	A measure of adhesive / cohesive strength of material, utilizing primed or unprimed lap panels.
	Specific Gravity	NT-TM-003	ASTM D-792	N/A	A measure of specific gravity utilizing a water displacement technique.
	Foam Density	NT-TM-026	ASTM D-3574; ASTM D-792	Mass / Volume	A measure of foam density.
	Refractive Index	NT-TM-018	ASTM D-1218; ASTM D-1747	Refractive Index	Index of uncrued and cured material measured by the critical angle method using monochromatic light.
	Color Measurement	NT-TM-110	ASTM D-523 / E-308	Delta E	Color measurement in transmission or reflectance against a standard.
	Shrink	NT-TM-059	-	%	Used to determine shrinkage of elastomeric materials which occurs during vulcanization and cure.
	Porosity	NT-TM-073	-	Porosity Rating 1-3	A measure of bubbles or pores within a cured elastomer. A comparison between the sample and a set of standards is reported.

NuSil Technology offers services, technology, and industry expertise for testing of silicones. Our well-equipped laboratories are staffed with knowledgeable chemists and technicians to assist in physical and chemical testing of silicones related to research, development, manufacturing, and application.

NuSil Technology is an ISO 9001 certified company and provides proven quality assurance for all testing applications.

Properties	Test	NuSil Test Method	ASTM Test Method	Units Reported	Description / Comments
Uncured Physical Properties	Specific Gravity	NT-TM-097	ASTM D-1298	N/A	A measure of specific gravity utilizing a hydrometer.
	Specific Gravity	NT-TM-022	ASTM D-891; ASTM D-1475	N/A	A measure of specific gravity utilizing a pycnometer.
	Flow	NT-TM-019	ASTM D-2202	0.1 inch	A measure of the degree of slump in a highly viscous material.
	Extrusion Rate	NT-TM-033	ASTM C-603	Mass / Unit time	A measure of the extrusion rate of unvulcanized rubber compounds.
	Viscosity	NT-TM-001	ASTM D-1084; ASTM D-2196	Centipoise	Viscosity measurement using Brookfield RVT viscometer.
	Kinematic Viscosity	NT-TM-025	ASTM 445	Centistoke	A measure of low viscosity fluids using Cannon Fenske routine.
	Plasticity	NT-TM-058	ASTM D-926	mils	The plasticity number is related to flow properties and elastic properties.
	Rheometer (ODR)	NT-TM-069	ASTM 2084	Max Torque (in.x lb.) Scorchtime (mins.) T90 (curetime)(mins.)	A specimen is contained within the vulcanization chamber under condition of preset temperature and pressure. A disk in contact with the specimen is oscillated through a small arc which exerts a shear strain on the specimen. The force (torque) required to oscillate the disk is proportional to the stiffness (shear-modulus) of the specimen.
Chemical Properties	Infrared Spectrophotometry FTIR	NT-TM-057		A scan will be provided	A method to determine material identity.
	Non-Volatile Content (% Solids)	NT-TM-004	ASTM D-2288; ASTM D-2369	%	A measurement of non-volatile and volatile content.
	Non-Volatile Content (% Solids) Silicone Primers	NT-TM-047	ASTM D-2288; ASTM D-2369	%	A measurement of non-volatile and volatile content in silicone primers.
	Total Mass Loss (TML) & Collected Volatile Condensible Materials (CVCM) from outgassing in a vacuum environment	NT-TM-072	ASTM E-595	%	The results are effective in determining the suitability of materials for use in aerospace, clean-room, circuit board, and other ultra high vacuum equipment applications.
	Swell Test, %	NT-TM-038	-	%	A measure of the absorption of solvent material via differences in specific gravity.
	Total Extractables, %	NT-TM-056	-	% Extractables	A measure quantifying the amount of extractable material in silicone via change in mass.
	Elemental Analysis & Trace Metals	NT-TM-131	ASTM E-305	ppm	Measure of trace elements.



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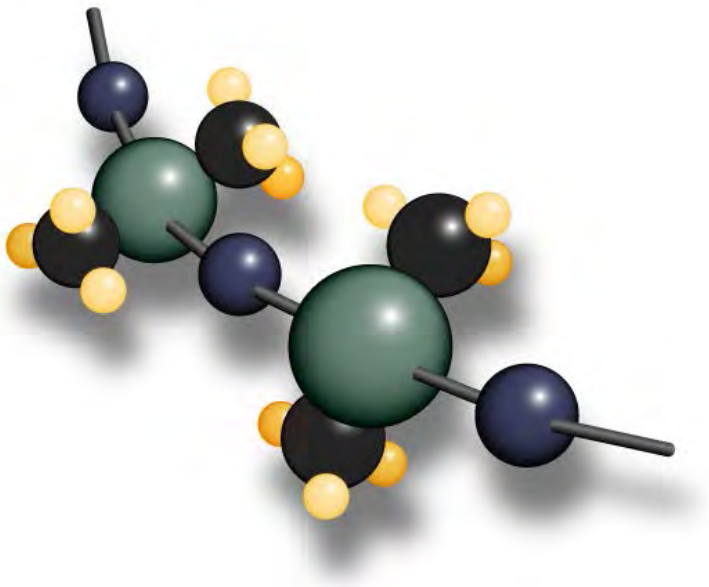

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