

Couplant Applications

Application	Best Couplant	Reason
Performance		
Highest Performance – Industry Standard	Ultragel II	Increased acoustic impedance for reduced surface noise, ferrous corrosion inhibition
Highest Performance – Environmentally Benign	Soundsafe Soundsafe HV	Increased acoustic impedance for reduced surface noise.
Highest Acoustic Transmission	High Z	Highest acoustic transmission, reduced noise on very rough and curved surfaces
Temperature		
Very slow drying	SonoGlide	Very slow drying at -60° to 200°F
Broad temperature range, water soluble	SonoGlide Thermasonic	-60° to 250° F 0° to 325° F
Very low temperature	SonoGlide (-60 ° F) Pyrogel (-50 ° F) Echogel XP (-5 ° F)	Sonoglide for water soluble Pyrogel for non water soluble, lowest temperature Lower cost
Extreme temperatures	Sono 1100 Sono 1100 strips Sono 1200	Operating range 700° F to 1100° F Operating range 700° F to 1100° F Operating range 700° F to 1200° F
Slow Drying		
Slow drying for large coverage and re-inspection	SonoGlide Echogel XP Thermasonic Gel 3000	
Very slow drying /long term flow metering	Sonotemp	0° F to 700° F
Inspection Surface		
Smooth surfaces, aircraft, composites	SonoGlide UP	Easy to apply and remove, thin couplant layer, slow drying, broad temperature range
Overhead surfaces	Soundsafe HV Ultragel II	Available in a 3.2oz pump Gel viscosity for overhead and vertical surfaces
Extremely rough metal surface with high surface acoustic noise	High Z	High Z provides the highest acoustic impedance of all Sonotech couplants.
Large weld areas	SonoGlide Fe Echogel XP	Spreads easily, dries slowly, clings well, broad temperature range
Small diameter piping	Echogel SonoGlide	Clings well to tubing / pipe
Corrosion Inhibition		
Highest ferrous corrosion inhibition	Ultragel II Sono 600	Ultragel II for water soluble Sono 600 for non water soluble
Magnesium	Gel 3000	
Broad temperature range	Thermasonic Sono 600	Excellent corrosion inhibition
Lower cost with good ferrous corrosion inhibition	Sonotrace Echogel	Moderately and economically priced ambient temperature couplants
Salt Stability		
Testing in the presence of salt cake, metal corrosion salts or highway salted bridges	Echogel Echogel XP SonoGlide UT-X Powder	All of these couplants resist breakdown in the presence of salt cake or salts of corrosion. SonoGlide and Echogel XP offer the broadest temperature ranges.
Environmental Impact		
Environmentally benign	Soundsafe Soundclear SonoGlide FE SonoGlide UP UT-X Powder UT-X FE Powder	No dyes or fragrance. Will not stain clothing. Low skin irritation potential.
Removal		
Easy removal	Sonotrace Soundclear	Water soluble; most easily removed quickly with water rinse

Inspection Materials		
Aluminum, titanium	SonoGlide UP Thermasonic Gel 3000	
Bridge Inspections, ski lifts, structural supports	Echogel XP	Salt stable, extended temperature range, clings well to vertical and overhead surfaces
Composites	Ultragel II Sonotrace Echowet Echocide	All products approved to Boeing BAC 5980 nondestructive inspection of composite parts and structures
Concrete, ceramic or brick surface	High Z	High Z provides a high acoustic transmission into high impedance mediums.
Copper Inspections	SonoGlide UP Thermasonic	
Fiberglass testing at ambient temperature	Soundsafe Soundclear	Both products will perform well on fiberglass at ambient temperatures and can be removed easily with water.
Food and Pharmaceutical processing equipment	SonoGlide UP Sono 600	Non-toxic, contain no dyes or fragrances, and has a broad temperature range
Magnesium Alloys	Gel 3000 Sono 600 Thermasonic	Specific corrosion or compatibility testing should be performed before using any couplant on magnesium alloys.
Plastics	SonoGlide UP Soundsafe	Will wet plastic and will not cause cracking
Cost		
Lowest cost (mix on site)	UT-X Powder UT-X Fe Powder	Self de-airing two packet system offers lump free mixing. Salt stable.
Good cost to performance ratio	Echogel Echogel XP Sonotrace	
Halogens & Sulfur Content		
Lowest level of halogens and sulfur	SonoGlide UP	< 25 ppm halogens < 25 ppm sulfur
Less than 50 ppm halogens & sulfur	Ultragel II Sonotrace Echogel Echogel XP SonoGlide FE Soundsafe Soundclear UT-X Powder	Standard Analysis Halogens – ASTM D808/ASTM D512 Sulfur – ASTM D129
Fluorescent tracer		
Ensure complete coverage and removal of couplant	Gel 3000	water-soluble, broad temperature range couplant containing a fluorescent tracer. <i>*UV and natural light tracers can be added to other couplants upon request</i>
Shear Wave		
Normal Incidence Shearwave	Shear Gel	Shear Gel provides coupling for shear wave generated by normal incidence (zero degree) shear wave transducers.
Glycerine-Free UT Couplants		
Glycerine-Free Couplants	Sonotrace UT-X Echogel Echogel XP Gel 3000 Thermasonic	All are glycerine-free ultrasonic couplants. Humex is completely free of all humectants and will dry more quickly as a result.
Immersion Additives		
Immersion Additives – wetting agent and antimicrobial combined	Echocide	Reduces surface and interfacial tension, eliminates air in immersion bath and is an antimicrobial.
Immersion Additive – corrosion inhibition	Echonox I	Good ferrous corrosion inhibitor that is compatible with most metals.