



## PLASTISOL PROPERTIES - FINISHED PRODUCTS

- TENSILE STRENGTH:** 500 - 3000 PSI
- ELONGATION:** 150 - 600%
- SPECIFIC GRAVITY:** 1.0 - 1.40
- SOLIDS:** 100%, EXCEPT FOR SOME COATING FORMULATIONS WHICH MAY CONTAIN MINOR PORTIONS OF SOLVENT FOR VISCOSITY ADJUSTMENT.
- HARDNESS (DUROMETER):** 10 SHORE A<sub>2</sub> TO 65 SHORE D
- FLEXIBILITY:** AS REQUIRED; GOOD TO TEMPERATURES AS LOW AS -20°F, AND IN SPECIAL CASES TO -65°F.
- RESILIENCE AND COMPRESSION SET:** PLASTISOL IS RECOMMENDED IN CASES WHERE RESILIENCE AND LOW COMPRESSION SET ARE IMPORTANT. COMPARED WITH SOME ELASTOMERS, ITS RETRACTION FROM ELONGATION AND RECOVERY FROM COMPRESSION IS GRADUAL. COLD FLOW IS MODERATE. THESE PROPERTIES ARE LIMITING ONLY IN INSTANCES WHERE EXTREME ELASTICITY AND COMPLETE RECOVERY ARE REQUIRED.
- ABRASION RESISTANCE:** EXCELLENT.
- COLOR:** UNLIMITED CHOICE. INDIVIDUAL COLORS CAN BE MATCHED. UV LIGHT RESISTANCE IS EXCELLENT AND COLORS WILL NOT CROCK OR FADE APPRECIABLY.
- TOXICITY:** REFER TO MSDS IN ALL CASES. THERE IS NO DOCUMENTED HARMFUL EFFECTS TO HUMAN SKIN DUE TO ACUTE AND CHRONIC CONTACT WITH PLASTISOL BASED PRODUCTS. PLASTISOLS CAN BE FORMULATED WITH INGREDIENTS APPROVED BY THE FDA FOR USE IN PRODUCTS THAT COME IN CONTACT WITH FOOD OR WHEN USED FOR ORAL CONTACT OR INTRADERMAL MEDICAL DEVICES.
- THERMAL CONDUCTIVITY:** 3.0 - 4.0 X 10<sup>-4</sup> CAL. PER SEC. PER SQ. CM., PER (°C PER CM).
- ADHESION:** GOOD NATURAL BOND TO MOST POROUS SURFACES SUCH AS PAPER, FABRICS, PILE, ROPE, VARIOUS FILTER MEDIA OR ANY MATERIAL WHICH WILL ALLOW SOME SUPERFICIAL PENETRATION BY THE PLASTISOL. FOR METAL, GLASS, CERAMICS, RUBBER AND OTHER PLASTICS, SPECIAL PRIMERS ARE USED TO PRODUCE A STRONG CHEMICAL BOND. GENERALLY, THESE PRIMERS WILL MAINTAIN THEIR EXCELLENT BOND UNDER ANY CONDITIONS TO WHICH THE PLASTISOL ITSELF IS RESISTANT.
- DIELECTRIC STRENGTH:** 400 VOLTS PER MIL IN THICKNESS OF AT LEAST 3 MILS. VOLUME RESISTIVITY IS ABOUT 10<sup>10</sup> TO 10<sup>14</sup> OHM-CM.
- FLAMMABILITY:** WHEN REQUIRED, PLASTISOL CAN BE FORMULATED TO BE SELF EXTINGUISHING.
- FUNGUS RESISTANCE:** ORDINARILY NOT A PROBLEM, BUT FUNGICIDES CAN BE ADDED WHEN CONDITIONS ARE ESPECIALLY SEVERE.
- HEAT RESISTANCE:** PLASTISOL IS THERMOPLASTIC AND SOME SOFTENING OCCURS ABOVE ROOM TEMPERATURE. HOWEVER, ALMOST ANY FORMULATION WILL WITHSTAND CONTINUOUS EXPOSURE TO TEMPERATURES OF 180°F WITHOUT ACTUAL DETERIORATION. SOME SPECIAL COMPOUNDS WILL RESIST TEMPERATURES AS HIGH AS 400°F FOR SHORT PERIODS OF TIME. THE EFFECT OF HEAT ON PLASTISOL BEGINS FIRST WITH SOFTENING OF THE FILM AND A GRADUAL LOSS OF FLEXIBILITY. AT SUSTAINED TEMPERATURES OVER 200°F, SOME DECOMPOSITION EVENTUALLY TAKES PLACE IN ALL BUT SPECIAL COMPOUNDS.
- WEATHER RESISTANCE:** PLASTISOLS CAN WITHSTAND ALL TYPES OF WEATHER WITH ONLY SLIGHT CHANGES IN APPEARANCE AND PHYSICAL PROPERTIES.
- CHEMICAL RESISTANCE:** PLASTISOLS WILL NOT DECOMPOSE OR CHANGE SIGNIFICANTLY IN ACIDS, ALKALIES, DETERGENTS, FOODSTUFFS, WATER OR OTHER NATURAL SUBSTANCES. CERTAIN FORMULATIONS HAVE PARTIAL RESISTANCE TO SOLVENTS AND MOST PETROLEUM DERIVATIVES. THE EFFECTS OF THESE CHEMICALS ON PLASTISOL ARE SOFTENING OF THE FILM AND SWELLING. WHEN REMOVED FROM IMMERSION, THE FILM USUALLY WILL SHRINK IN VOLUME AND WEIGHT AND HARDEN. IN THESE CASES, THE PRACTICABILITY OF USING PLASTISOL OFTEN DEPENDS ON THE TYPE OF EXPOSURE AND THE EFFECTS WHICH CAN BE TOLERATED IN THE END PRODUCT.