EXOR ELECTRONIC R&D TECH-NOTE

UniOP Chemical Resistance and Reliability Tests for the Touchscreen

Chemical Resistance

The coated surface of the EXOR touch screens are designed to resist most common household and industrial chemicals. Because most chemicals are more active at an elevated temperature, both normal room temperature and extreme operating temperature conditions are included.

Household Chemicals 24 hrs	Visual Effect 29 C 90% RH	Visual Effect 50 C Dry
Coffee	None	None
Catsup	None	None
Detergent (liquid)	None	None
Fantastik	None	None
Milk	None	None
Mustard	None	Slight yellowing
Strong Tea	None	None
Vinegar	None	None
Wisk	None	None

Solvents/Indust. Chemicals 1 hour continuous wet contact	Visual Effect	Visual Effect
Artificial Perspiration	None	None
Acetic Acid	None	None
Acetone/MEK 50/50	None	None
Brake Fluid	None	None
Butyl Acetate	None	None
Cellosolve Acetate	None	None
Ethanol/Isopropanol 50/50	None	None
Gasoline	None	None
Concentrated HCL	None	None
Oil Petroleum	None	None
Mineral Oil	None	None
40% Sodium Hydroxide	None	surface etch
111 Tricloroethane	None	None
Turpentine	None	None

Vm & P Naptha	None	None

Reliability Tests

EXOR has assembled a complete list of tests to insure and verify the life and functionality of the touchscreen. To Summarize:

Point of activation life: > 1 million activations

Single contact position using a 112 gram force and 1.3mm radius stylus.

Linear activation life: > 350,000

1/8" diameter Delrin stylus, 200 gms force, 1 stroke/sec, 2" stroke; 500,000 cycles unpowered, then - 350,000 cycles powered over same line as 500,000 cycles were done.

Linearity: Position accuracy better than 2% of full scale

Touch screens are 100% tested for linearity and compression.

Hardness: 6H

ASTM D3363 gouge hardness, TFP Test Procedure L1284-93
Pencil Hardness Test Scale (Softest to Hardest):
6B 5B 4B 3B 2B B HB F H 2H 3H 4H 5H 6H 7H 8H 9H

TEST	HAREDNESS
21 C	6H
50 C	6H
After 500 hrs at 60 C, 95% RH	6H
After 500 hrs at 85 C, 85% RH	6H

Adhesion: 5B

ASTM (tape), TFP Procedure L1284-87
Scale: OB = 100% Delamination, 5B = No Delamination.

Technical assistance may be obtained :

In North America EXOR at 1-513-874-4665.
In Europe EXOR Italy 045 - 8779068