WKH GROUP LTD
SPECIALIST ENGINEERS

PEERAGUARD® TECHNICAL DATA

COATING ADHESION:

This is measured by using the "Cross Hatch Test." PEERAGUARD® complies with the requirements of GT0.

SURFACE HARDNESS AND ABRASION RESISTANT:

There are a number of standard tests which measure various features of the surface including taber abrasion, wire wool abrasion and pencil hardness.

TABER ABRASION AND HAZE MEASUREMENT:

This is probably the most controlled method testing the abrasion resistance of a transparent substrate, and also the most widely accepted. This test has been carried out by an independent laboratory in accordance with the following American National Standards.

ASTM D1044 - 78

Resistant of transparent plastics to surface abrasion.

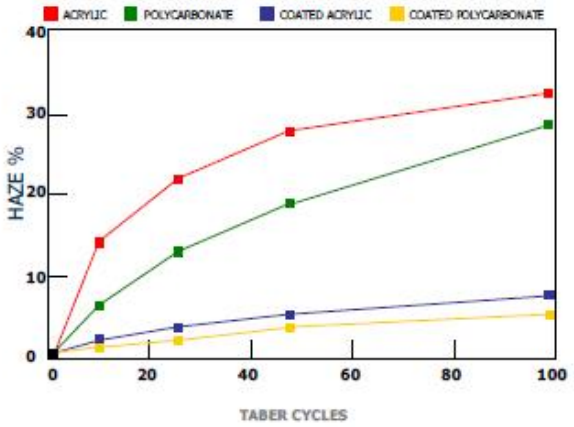
ASTM D1003

Test for haze and luminous transmittance of transparent plastics. The test is carried out using CS-10 F abrasion wheels with a 500g load for up to 100 cycles. Haze is measured before and after, and the result is given as a percentage of haze change.

FOLLOWING RESULTS WERE OBTAINED FOR 100 CYCLES:

Sample	Haze Change %
Uncoated Acrylic	29.5
Uncoated Polycarbonate	32.4
Clear coated Acrylic	5.1
Clear coated Polycarbonate	6.1

taber on PEERAGUARD® clear coatings



Results generated by independent test laboratory

PENCIL HARDNESS:

This is a well-established assessment of the hardness and abrasion resistance of surface coatings and can be easily verified by the end user. The surface hardness of PEERAGUARD® is affected by the type of substrate. Cast Acrylic and Polycarbonate behave differently due to the inherently softer nature of Polycarbonate.

PEERAGUARD® treated Acrylic	PEERAGUARD® treated Polycarbonate
6H	4H

CHEMICAL RESISTANCE:

PEERAGUARD® has been formulated to protect plastic substrates from chemical attack for industrial, commercial and military uses.

INDUSTRIAL AND COMMERCIAL:

The resistance to a wide range of cleaning agents and organic solvents is extremely important and PEERAGUARD® has been formulated to give outstanding resistance to all organic solvents and cleaning materials which are in common use. It is well known that the resistance of untreated Acrylic and Polycarbonate to chemical attack is very limited and seriously restricts their use in many applications. The table below shows the resistance to attack from various chemicals and qualifies the resistance by reference to short (S), medium (M) and long (L) term stability.

RESISTANCE TABLE SOLVENT OR REAGENT	PEERAGUARD COATED ACRYLIC	PEERAGUARD COATED POLYCARBONATE
Ethanol	L	L
Propanol	L	L
Acetone	L	M
MEK	L	M
Petrol	L	L
Dilute Ammonia	L	L
Dilute Caustic Soda	L	M
Concentrated Caustic Soda	L	M
Dilute Organic Acid	L	L
Dilute Inorganic Acid	L	L

S - Short Term Resistance - drops/spills
M - Medium Term Resistance - up to 8hrs
L - Long Term Resistance - no attack

MILITARY:

PEERAGUARD® coating has been assessed in chemical hardness (damage) test for military applications. The coating prevented attack from all agents and decontaminants used.

Chemical agents simulated were:
Persistent nerve (VX)
Sulphur mustard (H)
Test liquids were chosen to simulate the above agents in terms of their relevant physical parameters.

Decontaminants tested were:
Supertropical Bleach (STB)
STB emulsion in chlorinated solvent (C8)
Alkaline/Amine solvent mixture (Canadian design designation C1, US equivalent DS2)

No attack or degradation of the coating was observed at any point. However, a lime scale build-up due to the use of C8 was caused. This scale can be cleaned off using commercially available de-scalers, commercial vinegar or lemon juice, or other acids such as dilute battery acid. After de-scaling, the clarity of the coating was fully restored with no residue damage.

COATING FLATNESS:

Coating flatness is important when working with clear coatings so that low optical distortion is produced. With a spray process, this would normally manifest itself as 'orange peel' on a coated surface. With the PEERAGUARD® coating system this is virtually eliminated and, on a flat substrate, a coating flatness of + - 6nM can be achieved (6 millionth's of a mm).