Quick-Mark™ Specifications

Description

Quick-Mark™ consists of Imaging Films, Base Sheets and Over-Laminating Films. The Imaging Film is available in seven different colours and the vinyl Base Sheets in three colours, transparent and 0.2mm aluminium. All Base Sheets have double sided acrylic adhesive. Imaging film consists of a coloured emulsion on a transparent polyester carrier and is exposed to UV and the image processed via a dry peel technique - no developer.

Plastic Base Sheets *all base sheets have a double sided acrylic adhesive.*

Superior quality, soft polymeric 75 micron vinyl films using the latest advances in PVC and pigment technology to offer improved dimensional stability and excellent long term durability. The wide range of light fast colours are suitable for long term interior or exterior applications of an outdoor exposure of 5-7 years.

Make up	75 micron vinyl Adhesive Base - 30 micron base clear, permanent cross linking acrylic adhesive with 137 gsm plain projected Kraft Release Liner. Adhesive Top Face - 40 micron base clear, permanent cross linking acrylic with 100 micron clear polyethylene liner.
Storage	Two years from packing date out of direct sunlight at 15°C to 25°C and 50% humidity.
Tensile (Min.)	25.ON/mm² (Test method DIN 53445)
Elongation (Min.)	250% (Test method DIN 53445)
Dimension Stability	150 x 150mm 48 hours/70°C FINAT FT 14 Aluminium <0.5mm
Flammability	SELF EXTINGUISHING
Weathering	White 7 years Other colours 5 years
Application Temp. **Service Temp.**	Clean dry surface, +2°C to +50°C Clean dry surface, -40°C to +90°C
Base/Rear Adhesion	20 Mins/90° FINAT FT 1/Stainless Steel = 520N/Metre 20 Mins/180° FINAT FT 1/Stainless Steel = 620N/Metre 24 Hours/90° FINAT FT 1/Stainless Steel = 700N/Metre 24 Hours/180° FINAT FT 1/Stainless Steel = 900N/Metre Static Shear (25 x 25mm) FINAT FT 8 Stainless Steel > 16 hours.
Top Face Adhesion	Quick Tack (N/25mm) on stainless steel average value 16 (FTM 9) Peel 180° - 30 min (N/25mm) on stainless steel average value 13 (FTM 1) Shear 1KG 25 x 25mm > 500 hours (FTM 8)
Chemical Resistance	The following tests were carried out on the base film. A sample was prepared by applying the film to an aluminium panel at 23°C and conditioning 24 hours prior to testing by immersion in the solutions. After a fixed period of time the sample is removed, dried and examined for adhesion one hour after test.

Solution/Reagent	Exposure	Results / Observations
Humidity	300 hours	No effects
Water	24 hours immersion	No effects
Sea Water	1 year mid tide BS5609	No effects
Diesel Fuel	24 hours immersion	No effects
Anti Freeze/water	24 hours immersion	No effects
Reference Fuel	1 hr immersion	Very slight film softening
SAE Motor Oil	24 hours immersion	No effects
Detergent Solution (65°C)	8 hours immersion	No effects

Please read notes pertaining to tests at the end of this data sheet.

Aluminium Base Sheets

High quality mill finish 0.2 mm aluminium.

Make up 1050 Alloy, Hard Temper.
Double sided adhesive - both faces - 40 micron clear, permanent cross linked acrylic adhesive with 100 micron clear polyethylene liner.

Storage Two years from packing date out of direct sunlight at 15°C to 25°C and 50% humidity.

Application Temp. Clean dry surface, +2°C to +50°C
Service Temp. Clean dry surface, -30°C to +80°C

Adhesion (both faces) Quick Tack (N/25mm) on stainless steel average value 16 (FTM 9)
Peel 180° - 30 min (N/25mm) on stainless steel average value 13 (FTM 1)
Shear 1KG 25 x 25mm > 500 hours (FTM 8)

Over-Laminating Films

A matt and gloss over-laminating film are available. Both have a single sided acrylic adhesive and are designed to provide extra protection to a Quick-Mark™ label where the Imaging Film emulsion is left exposed on the top surface.
The matt film can also be used to change the aesthetic appearance of a finished label to a matt anti-reflective appearance.

Gloss

Make Up The material and specification is the same as the transparent Base Sheet expect it does not have a top surface adhesive.

Matt

Make Up A matt 70 micron PVC film with 25 micron of acrylic adhesive protected by a yellow 90g/m² yellow Kraft paper. The film has a matt appearance with anti-reflective properties.

Storage Two years from packing date at 15°C to 25°C and 50% humidity.

Application Temp. Clean dry surface, +5°C to +40°C
Service Temp. Clean dry surface, -30°C to +80°C

Adhesion Quick Tack (N/25mm) on stainless steel average value 4 +/- 1 (FTM 9)
Peel 180° - 30 min (N/25mm) on stainless steel aver. value 2.5+/-1 (FTM 1)
Shear 1KG 25 x 25mm > 100 hours (FTM 8)

Chemical Resistance The following tests were carried out on the base film. A sample was prepared by applying the film to an aluminium panel at 23°C and conditioning 24 hours prior to testing by immersion in the solutions. After a fixed period of time the sample is removed, dried and examined for adhesion one hour after test.

Solution/Reagent	Immersion Time	Results / Observations
Water	24 hours	Excellent
5% Detergent	24 hours	Excellent
10% Sulphuric Acid	24 hours	Excellent
10% Phosphoric Acid	24 hours	Good
10% Sodium Hydroxide	24 hours	Excellent
10% Ammonium Hydroxide	24 hours	Excellent
Ethylene Glycol	24 hours	Excellent
Methanol	1 hour	Good

Please read notes pertaining to tests at the end of this data sheet.

Imaging Films

Seven different colours are available. The film consists of a coloured emulsion sandwiched between two layers of transparent polyester carrier film, 50 microns top film, 76.2 microns bottom film.

Storage Two years from packing date at 21°C - 24°C and 30% - 70% relative humidity. Avoid conditions exceeding 32°C and 70% relative humidity.

Application Temp. Clean dry surface, +2°C to +50°C

UV Ageing UV ageing tests on unexposed Imaging Films

White 1 year - some colour loss.
Other colours 5 years - no noticeable colour loss.

UV ageing tests on processed samples still being undertaken (as at 3-2-97).

Dimensional Stability

	Specification	Test Method
Shrinkage 150°C 30 minutes	(%) <3.0MD/2.0TD	ASTM D 1204-78

Environmental Performance Testing

Labels with Imaging Film and labels with Imaging Film and Over-Laminating Film were tested.

Chemical Resistance

The samples were subjected to a chemical resistance test in accordance with ISO 2812 part 1 Method 3 (spotting method) using the following materials: water, mineral oil, industrial methylated spirits, white spirit, base at pH 10 and acid at pH 4. The materials were left in contact with the labels for a period of 4 hours at a temperature of 23°C. The method was modified by soaking a piece of filter board with the methylated spirit applying this to the surface of the label. This was because of the volatility of the methylated spirit. All the other test methods were applied as liquids. All materials were covered to prevent evaporation. After 4 hours the test liquids were removed with a soft cloth and the labels examined.

Test		Plastic Label	Aluminium Label
Chemical Resistance 4 hour dwell	Water	No effect	No effect
	Oil	No effect	No effect
	Base pH 10	No effect	No effect
	Acid pH 4	No effect	No effect
	Alcohol	No effect	No effect
	White Spirit	No effect	No effect

Temperature Resistance

The samples were exposed for 7 days to temperatures varying from -23°C to 90°C. At the end of the exposure period they were examined visually for damage to the label. The adhesion to the aluminium panel was tested and compared to a control sample kept at room temperature.

Test		Plastic Label	Aluminium Label
Temperature resistance 7 day exposure	-23°C to 90°C	No sample showed detrimental effects or loss of adhesion to unexposed control sample.	No sample showed detrimental effects or loss of adhesion to unexposed control sample.

Abrasion Resistance

The samples were subject to 750 cycles on the Taber Abraser (ASTM S4060) using CS17 wheels with a load of 1000g. The weight loss in milligrams was determined.

Test	Plastic Label	Aluminium Label
Abrasion Resistance Taber CS17 1000g.	Weight loss: Sample 1 - 30.0mg Sample 2 - 29.8mg After 750 cycles samples show no loss of legibility, only surface scratching causing loss of gloss.	Weight loss: Sample 1 - 34.6mg Sample 2 - 27.9mg After 750 cycles samples show no loss of legibility, only surface scratching causing loss of gloss.

Humidity

The samples were exposed for a period of 72 hours at 32°C and 95% RH. At the end of the test period they were visually examined and the adhesion tested as in the temperature resistance test.

Test	Plastic Label	Aluminium Label
Humidity 32°C 955 RH 72 hours	No detrimental effect observed. No loss of adhesion relative to unexposed control sample.	No detrimental effect observed. No loss of adhesion relative to unexposed control sample.

Salt Spray

The samples were exposed for a period of 48 hours to neutral salt spray (5% concentration) in accordance with BS 3900:F12 at a temperature of 35°C. At the end of the test period they were visually examined and the adhesion tested.

Test	Plastic Label	Aluminium Label
Salt Spray 5% concentration 35°C 48 hours.	No detrimental effect observed. No loss of adhesion relative to unexposed control sample.	No detrimental effect observed. No loss of adhesion relative to unexposed control

Test Notes

1. FTM denotes FINAT test methods which are used as standards throughout the European adhesive labelling industry. FINAT is short for:
FÉDÉRATION INTERNATIONALE DES FABRICANTS ET TRANFURMATEURS D'ADHÉSIFS ET THERMOCOLLANTS SUR PAPIERS ET AUTRES SUPPORTS.

2. Certain test data such as service temperatures may show higher readings for the Base Sheets that for the Imaging Film. As each label must comprise of a piece of Imaging Film, either over-laminated or not, it is suggested the lower figures of the Imaging Film are used for data comparisons.

3. **In all cases,** all statements, technical information and recommendations herein are based on tests we believe to be reliable, but the accuracy or completeness thereof is not guaranteed, and the following is made in lieu of all warranties of merchantability and fitness for purpose: Seller's and manufacturer's only obligation shall be to replace such quantity of the product proved to be defective. Before using, user shall determine the suitability of the product for its intended use, and user assumes all risk and liability whatsoever in connection therewith. NEITHER THE SELLER NOT MANUFACTURER SHALL BE LIABLE EITHER IN TORT OR IN CONTRACT FOR ANY LOSS OR DAMAGE, DIRECT, INCIDENTAL, OR CONSEQUENTIAL, ARISING OUT OF THE USE OF OR THE INABILITY TO USE THE PRODUCT. No statement or recommendation not contained herein shall have any force or effect unless in an agreement signed by officers of seller and manufacturer.

Document Reference QUKSPEC.DOC Issue date: 3-Feb-97.

Quick-Mark™

What is Quick-Mark™ ?

A new chemical free, two part, self adhesive backed labelling system. It is based on a 12" X 20" coloured polyester imaging sheet and a double sided acrylic adhesive coated coloured PVC vinyl or aluminium Base Sheet. The system is ideal for signs, labels, warning notices, facias, dials and displays and **should be considered as a suitable replacement to 3M Dynamark.**

How does it work ?

A master artwork is produced which is then exposed with a piece of Quick-Mark™ Imaging Film in a UV exposure unit. The image is processed by simply peeling the two layers of the Imaging Film apart. This is then wet laminated to a selected Base Sheet.

With a negative artwork - (*the best way to use Quick-Mark™).*

After exposure the Imaging Film is then placed on the "Peeling Board", a low tack adhesive coated board and the top layer of the Imaging Film peeled away. This peeled layer will be a reversed image of the original artwork in the form of a coloured emulsion on a transparent polyester carrier. The emulsion is always in the middle of the two peeled layers, i.e., on the underside of the top peeled layer. This layer of the Imaging Film is then laminated, with a small amount of water in the Quick-Mark™ Processing Tray, to the double sided adhesive coated Base Sheet before being trimmed to size.

With a positive artwork.

If a positive to positive result is required a positive artwork with the emulsion on the top side will be required i.e., right reading emulsion side up, (this is how a Laser Printer artwork would appear). The positive is turned over, mirror image, and placed in contact with a piece of Imaging film and exposed. The exposed film is peeled but this time the bottom layer is used. This will appear on the Peeling Board as a mirror (wrong reading) image. When turned over to a right reading to be laminated to a piece of base material the emulsion on the image will be, once again, sub-surface.

To aid peeling at least two edges of the Imaging Film should be masked during exposure. Most negatives will already have two opaque edges but some extra masking will be required when using positives. This may reduce the total usable area of an initial sheet.

Over-Laminating Film.
The two methods of using Quick-Mark™ described above will result in the final product being self laminated and therefore no extra protection will be required. If however, the original artwork does not have the emulsion on the correct side then, bearing in mind any exposure should always be artwork emulsion in contact with Imaging Film, the resulting label may not be self laminating as it will have the emulsion on the top surface, unprotected. If this is the case gloss or matt protective over-laminating Films should be used on the final Quick-Mark™ label. The Matt Film can also be used if the user requires a matt finish rather than the gloss of the Imaging Film.

Components: -

all material supplied as 5 sheets 12" x 20"

which can be easily cut down to 10" x 12".

Imaging Film -
Black
Dark Blue
Red
Green
White
Brown
Light Blue

Base Films -

White	75 micron PVC Vinyl
Yellow	75 micron PVC Vinyl
Silver	75 micron PVC Vinyl
Transparent	75 micron PVC Vinyl
Aluminium	0.20 mm aluminium

Base Film 11" x 20"
Gold Anod. aluminium
0.40mm aluminium

Over-Laminating Films -
Gloss
Matt
Lexan Polycarbonate

Peeling Board -
essential for the peeling process

Processing Tray - for spraying on water prior to lamination

PA1 applicator / Sleeve - to aid lamination of Imaging to Base Film

Hand held water spray -
not supplied

When will it be available ?
All products now available ex-stock.

When can I order ?
A price list is enclosed and we look forward to receiving your order any time from now. If you have any questions, please contact the undermentioned.

Who do I contact for further information ?
Phone Mega Electronics and ask for:

Tony Hawkins -
Sales & Marketing Manager
01223 893900
based in Cambridge Head Office

Maurice Jezzard -
Product Specialist
01293 536800
based in CRAWLEY, Sussex
or 01223 893900

Rod Baldwin -
Northern Area Field Sales Manager
0378 524 933
based in LEEDS

Quick-Mark™ Specifications

Description

Quick-Mark™ consists of Imaging Films, Base Sheets and Over-Laminating Films. The Imaging Film is available in seven different colours and the vinyl Base Sheets in three colours, transparent and 0.2mm aluminium. All Base Sheets have double sided acrylic adhesive. Imaging film consists of a coloured emulsion on a transparent polyester carrier and is exposed to UV and the image processed via a dry peel technique - no developer.

Plastic Base Sheets *all base sheets have a double sided acrylic adhesive.*

Superior quality, soft polymeric 75 micron vinyl films using the latest advances in PVC and pigment technology to offer improved dimensional stability and excellent long term durability. The wide range of light fast colours are suitable for long term interior or exterior applications of an outdoor exposure of 5-7 years.

Make up
75 micron vinyl
Adhesive Base - 30 micron base clear, permanent cross linking acrylic adhesive with 137 gsm plain projected Kraft Release Liner.
Adhesive Top Face - 40 micron base clear, permanent cross linking acrylic with 100 micron clear polyethylene liner.

Storage
Two years from packing date out of direct sunlight at 15°C to 25°C and 50% humidity.

Tensile (Min.)
25.0N/mm² (Test method DIN 53445)

Elongation (Min.)
250% (Test method DIN 53445)

Dimension Stability
150 x 150mm 48 hours/70°C FINAT FT 14 Aluminium <0.5mm

Flammability
SELF EXTINGUISHING

Weathering
White 7 years
Other colours 5 years

Application Temp.
Clean dry surface, +2°C to +50°C

Service Temp.
Clean dry surface, -40°C to +90°C

Base/Rear Adhesion
20 Mins/90° FINAT FT 1/Stainless Steel = 520N/Metre
20 Mins/180° FINAT FT 1/Stainless Steel = 620N/Metre
24 Hours/90° FINAT FT 1/Stainless Steel = 700N/Metre
24 Hours/180° FINAT FT 1/Stainless Steel = 900N/Metre
Static Shear (25 x 25mm) FINAT FT 8 Stainless Steel > 16 hours.

Top Face Adhesion
Quick Tack (N/25mm) on stainless steel average value 16 (FTM 9)
Peel 180° - 30 min (N/25mm) on stainless steel average value 13 (FTM 1)
Shear 1KG 25 x 25mm > 500 hours (FTM 8)

Chemical Resistance
The following tests were carried out on the base film. A sample was prepared by applying the film to an aluminium panel at 23°C and conditioning 24 hours prior to testing by immersion in the solutions. After a fixed period of time the sample is removed, dried and examined for adhesion one hour after test.

Solution/Reagent	Exposure	Results / Observations
Humidity	300 hours	No effects
Water	24 hours immersion	No effects
Sea Water	1 year mid tide BS5609	No effects
Diesel Fuel	24 hours immersion	No effects
Anti Freeze/water	24 hours immersion	No effects
Reference Fuel	1 hr immersion	Very slight film softening
SAE Motor Oil	24 hours immersion	No effects
Detergent Solution (65°C)	8 hours immersion	No effects

Please read notes pertaining to tests at the end of this data sheet.

Aluminium Base Sheets

High quality mill finish 0.2 mm aluminium.

Make up	1050 Alloy, Hard Temper. Double sided adhesive - both faces - 40 micron clear, permanent cross linked acrylic adhesive with 100 micron clear polyethylene liner.
Storage	Two years from packing date out of direct sunlight at 15°C to 25°C and 50% humidity.
Application Temp. **Service Temp.**	Clean dry surface, +2°C to +50°C Clean dry surface, -30°C to +90°C
Adhesion (both faces)	Quick Tack (N/25mm) on stainless steel average value 16 (FTM 9) Peel 180° - 30 min (N/25mm) on stainless steel average value 13 (FTM 1) Shear 1KG 25 x 25mm > 500 hours (FTM 8)

Over-Laminating Films

A matt and gloss over-laminating film are available. Both have a single sided acrylic adhesive and are designed to provide extra protection to a Quick-Mark™ label where the Imaging Film emulsion is left exposed on the top surface.

The matt film can also be used to change the aesthetic appearance of a finished label to a matt anti-reflective appearance.

Gloss

Make Up	The material and specification is the same as the transparent Base Sheet expect it does not have a top surface adhesive.

Matt

Make Up	A matt 70 micron PVC film with 25 micron of acrylic adhesive protected by a yellow 90g/m² yellow Kraft paper. The film has a matt appearance with anti-reflective properties.
Storage	Two years from packing date at 15°C to 25°C and 50% humidity.
Application Temp. **Service Temp.**	Clean dry surface, +5°C to +40°C Clean dry surface, -30°C to +90°C
Adhesion	Quick Tack (N/25mm) on stainless steel average value 4 +/- 1 (FTM 9) Peel 180° - 30 min (N/25mm) on stainless steel aver. value 2.5+/-1 (FTM 1) Shear 1KG 25 x 25mm > 100 hours (FTM 8)

Chemical Resistance The following tests were carried out on the base film. A sample was prepared by applying the film to an aluminium panel at 23°C and conditioning 24 hours prior to testing by immersion in the solutions. After a fixed period of time the sample is removed, dried and examined for adhesion one hour after test.

Solution/Reagent	Immersion Time	Results / Observations
Water	24 hours	Excellent
5% Detergent	24 hours	Excellent
10% Sulphuric Acid	24 hours	Excellent
10% Phosphoric Acid	24 hours	Good
10% Sodium Hydroxide	24 hours	Excellent
10% Ammonium Hydroxide	24 hours	Excellent
Ethylene Glycol	24 hours	Excellent
Methanol	1 hour	Good

Please read notes pertaining to tests at the end of this data sheet.

Imaging Films

Seven different colours are available. The film consists of a coloured emulsion sandwiched between two layers of transparent polyester carrier film, 50 microns top film, 76.2 microns bottom film.

Storage Two years from packing date at 21°C - 24°C and 30% - 70% relative humidity. Avoid conditions exceeding 32°C and 70% relative humidity.

Application Temp. Clean dry surface, +2°C to +50°C

UV Ageing UV ageing tests on unexposed Imaging Films

White 1 year - some colour loss.
Other colours 5 years - no noticeable colour loss.

UV ageing tests on processed samples - test data below under Environmental Performance Testing

Dimensional Stability

	Specification	Test Method
Shrinkage 150°C 30 minutes	(%) <3.0MD/2.0TD	ASTM D 1204-78

Environmental Performance Testing

Labels with Imaging Film and labels with Imaging Film and Over-Laminating Film were tested.

Chemical Resistance

The samples were subjected to a chemical resistance test in accordance with ISO 2812 part 1 Method 3 (spotting method) using the following materials: water, mineral oil, industrial methylated spirits, white spirit, base at pH 10 and acid at pH 4. The materials were left in contact with the labels for a period of 4 hours at a temperature of 23°C. The method was modified by soaking a piece of filter board with the methylated spirit applying this to the surface of the label. This was because of the volatility of the methylated spirit. All the other test methods were applied as liquids. All materials were covered to prevent evaporation. After 4 hours the test liquids were removed with a soft cloth and the labels examined.

Test		Plastic Label	Aluminium Label
Chemical Resistance 4 hour dwell	Water	No effect	No effect
	Oil	No effect	No effect
	Base pH 10	No effect	No effect
	Acid pH 4	No effect	No effect
	Alcohol	No effect	No effect
	White Spirit	No effect	No effect

Temperature Resistance -23°C to 90°C

The samples were exposed for 7 days to temperatures varying from -23°C to 90°C. At the end of the exposure period they were examined visually for damage to the label. The adhesion to the aluminium panel was tested and compared to a control sample kept at room temperature.

Test		Plastic Label	Aluminium Label
Temperature resistance 7 day exposure	-23°C to 90°C	No sample showed detrimental effects or loss of adhesion to unexposed control sample.	No sample showed detrimental effects or loss of adhesion to unexposed control sample.

Higher Termperature Tests - 115°C - 120°C

Secondary temperature tests were carried out on a label manufactured from Imaging Film and a Base Sheet without any over-lamination. The sample was applied to an aluminium substrate and subjected to temperatues from 115°C to 120°C for 10 hours. at the end of the exposure period, the label was examined visually for damage and the adhesion compared to a control sample left at room temperature

Test		Plastic Label	Aluminium Label
Temperature resistance 10 hours exposure	115°C to (120°C	No sample showed detrimental effects or noticable loss of adhesion to unexposed control	No sample showed detrimental effects or noticable loss of adhesion to unexposed control

Abrasion Resistance

The samples were subject to 750 cycles on the Taber Abraser (ASTM S4060) using CS17 wheels with a load of 1000g. The weight loss in milligrams was determined.

Test	Plastic Label	Aluminium Label
Abrasion Resistance Taber CS17 1000g.	Weight loss: Sample 1 - 30.0mg Sample 2 - 29.8mg After 750 cycles samples show no loss of legibility, only surface scratching causing loss of gloss.	Weight loss: Sample 1 - 34.6mg Sample 2 - 27.9mg After 750 cycles samples show no loss of legibility, only surface scratching causing loss of gloss.

Humidity

The samples were exposed for a period of 72 hours at 32°C and 95% RH. At the end of the test period they were visually examined and the adhesion tested as in the temperature resistance test.

Test	Plastic Label	Aluminium Label
Humidity 32°C 955 RH 72 hours	No detrimental effect observed. No loss of adhesion relative to unexposed control sample.	No detrimental effect observed. No loss of adhesion relative to unexposed control sample.

Salt Spray

The samples were exposed for a period of 48 hours to neutral salt spray (5% concentration) in accordance with BS 3900:F12 at a temperature of 35°C. At the end of the test period they were visually examined and the adhesion tested.

Test	Plastic Label	Aluminium Label
Salt Spray 5% concentration 35°C 48 hours.	No detrimental effect observed. No loss of adhesion relative to	No detrimental effect observed. No loss of adhesion relative to unexposed