



Scotchcal™ Screen Printing

Ink Series 1900

Description

Advantages

- Fast drying half tone and line inks
- Highly flexible
- Superior outdoor durability

Application and End Uses

Scotchcal 1900 series screen printing inks are high performance fast drying inks formulated for use on 3M™ Controltac™ Plus, 3M™ Scotchcal™ Plus, 3M™ Scotchcal™ films and 3M™ Scotchlite™ Plus Reflective Marking Film. The 3M™ Scotchcal™ Screen Printing Ink Series 1900 were developed to give superior exterior performance on difficult application surfaces, including corrugated and riveted surfaces. In order to obtain these superior properties, 3M™ Scotchcal™ Screen Printing Ink Series 1900 should be dried in a conveyor dryer. When printed onto 3M™ Controltac™ Plus Flexible Marking Film 190 and 3M™ Scotchcal™ Contour Film 1100 these inks must be conveyor dried.

3M™ Scotchcal™ Screen Printing Ink Series 1900 consist of line inks, four colour half tone inks and metallic pastes. They are an integral part of a Matched Component System (MCS™) warranty where the approved 3M™ Controltac™ Plus, 3M™ Scotchcal™ Plus, 3M™ Scotchcal™ films and 3M™ Scotchlite™ Plus Reflective Marking Film, the 3M™ Scotchcal™ Screen Printing Ink, overprint clear coat and application tapes SCPM-19 and SCPS-100 constitute a total compatible package.

All customers must receive training from 3M on usage of process equipment and inks before ordering and screen printing 1900 series inks.

Health and Safety

Refer to the container labels and Material Safety Data Sheets for health, safety and handling information on the products referenced in this bulletin. For 3M products you may contact the local 3M Technical Service.

Available Products

1900 series screen printing line inks	
1902	Red Shade Yellow
1903	White
1905	Black
1910	Gloss Toner/Reducer
1912	Green Shade Yellow
1913	Yellow Shade Orange
1914	Dark Green
1916	Green Shade Blue
1918	Yellow Shade Red
1920DR	Dirt Resistant Overprint Clear
1924	Light Green
1927	Blue Violet
1930	Matte Overprint Clear
1932	Lemon Yellow
1933	Orange
1937	Red Violet
1943	Dark Brown
1952	Transparent Red Shade Yellow
1967	Magenta
1970	Red Shade Blue
1971	Deep Red
1972	Transparent Green Shade Yellow

Note: All inks are lead-free except 1902, 1912 and 1933

1900 series 4-colour half tone process inks	
1990	Yellow Half tone Ink Concentrate
1991	Magenta Half tone Ink Concentrate
1995	Black Half tone Ink Concentrate
1996	Cyan Half tone Ink Concentrate
1997	Standard Half tone Base
1998	Retarder Half tone Base

Clears Coats, Thinners, Retarders, Premask and Prespace	
Overprint Clear	1920 DR gloss 1930 matte
Thinners for inks & clears	CGS-30/50/80
Premasking	SCPM-19
Prespacing	SCPS-100

Note: The higher the CGS number of the appropriate thinner or retarder, the slower the evaporation rate. Matte overprint clear 1930 can neither be used on 3M™ Controltac™ *Plus* Flexible Marking Film 190 nor on 3M™ Scotchcal™ Contour Film 1100.

1900 series metallic pastes	
1960	Small Aluminium Flake
1961	Medium Aluminium Flake

Packaging

The line inks are sold in in one US gallon (3.8 litres) and in one litre containers.

The ink half tone concentrates, halftone bases, overprint clear coats, thinners and retarders are sold in one US gallon containers. The half tone bases are also sold in five US gallon containers and the thinners in one litre containers.

Coverage

Coverage of Line Inks

The coverage of press ready inks will vary with the screen mesh used; however, a coverage of 30–40 sqm per litre can be expected.

Coverage Four Colour Half Tone Inks

The coverage of inks applied as recommended with a 120 mesh will be approximately 45 sqm/litre when printed solid.

Coverage Clear Coat

One litre of overprint clear will cover approximately about 60 sqm/litre when thinned down to print viscosity with about 25 percent of CGS thinner or retarder and printed through a 90T screen. Use of a fabric finer than 90 T will result in shortened durability. Matte clear coat 1930 is neither recommended nor warranted for use on 3M™ Controltac™ *Plus* Flexible Marking Film 190 and 3M™ Scotchcal™ Contour Film 1100.

Metallic Pastes

The 1900 series metallic pastes are offered as part of a Matched Component System (MCS™) which consists of the following:

1900 series metallic pastes	
1960	Small Aluminium Flake
1961	Medium Aluminium Flake

Coverage Metallic Inks

The coverage of thinned inks will vary with the screen mesh used; however, coverage of 30-40 sqm/litre can be expected.

Processing Metallic Inks

Gold and silver metallic inks can be made by mixing metallic pastes and transparent line inks. The larger the flake used, the more sparkle it imparts to the inks. Inks to be used when matching gold and silver metallic inks include transparent yellows 1952 and 1972 along with reds (1918, 1937, and 1971), blues (1916, 1927, and 1970), green (1914) and black (1905). It is not recommended to use more than 12% aluminium flake by weight in a formulation prior to thinning as the inks might flake upon removal of the application tape.

Note: It is recommended not to use more than 8% flake by weight when printing either 3M™ Controltac™ *Plus* Flexible Marking Film 190 or 3M™ Scotchcal™ Contour Film 1100

Warranty

The warranty given by 3M depends on the screen printing ink/film combination. Detailed warranty information are listed in the 3M Graphic Warranties Matrix. Graphics printed with 3M™ Screen Printing Ink Series 1900 have to be clear coated to obtain the 3M warranties.

When printed and applied in accordance with 3M recommended procedures, the following performance may be expected. Durability will depend upon substrate selection and preparation, exposure conditions and maintenance of the markings.

Please refer to the 3M MCS Warranty Matrix to obtain the detailed 3M MCS warranty statement for the chosen product construction.

Listed below are the maximum warranties (years) given for 3M™ Screen Printing Ink Series 1900:

	Zone 1	Zone 2	Zone 3
Line Ink	8	6	4
4-Colour Ink	6	5	4

Metallic inks are not warranted for more than 5 years.

Matte clear coat 1930 has a limited warranty of 3 years.

Performance is based upon field experience and exposure tests conducted throughout Europe and the United States. Performance can be affected by substrate selection and preparation, exposure conditions and maintenance of the marking.

When printed and applied in accordance with 3M recommended procedures, performance life is subject to the following qualifications.

- Markings are warranted against fading, cracking, peeling, lifting or discoloration due to natural weathering.
- Markings are not warranted against ink or overprint clear removal, base film damage or lifting, or staining caused by or the use of non-approved cleaning methods, solutions or solvents or excessive abrasion.
- Changes in appearance caused by bird deposits, insect secretions, and dirt are not covered under this warranty.
- Markings are not warranted if applied to unsound surfaces or to surfaces which subsequently crack, peel, outgas or become damaged beneath the marking.
- Markings fabricated with non-3M materials are not warranted.
- Markings are not warranted for damage from any cause which could be covered by appropriate insurance.

Premasking / Prespacing

Conditions	3M Application Tapes
General Premasking	SCPM-19
General Prespacing	SCPS-100

Storage

Inks should be stored at temperatures between 21°C and 32°C (70 - 90°F) and used within one year of the date of purchase.

Important Notice

This bulletin provides technical information only. All questions of warranty and liability relating to this product are governed by the terms and conditions of the sale, subject, where applicable, to the prevailing law.

Before using, the user must determine the suitability of the product for its required or intended use, and the user assumes all risk and liability whatsoever in connection therewith.

3M Related Literature

The following may be of interest:

Subject	Bulletin No.
Instruction Bulletins	
Screen Printing with Series 1900 line inks	3.12
Screen printing with 4-colour ink 1900 series	3.11
Preparation for 4-colour printing	31.1
Clear coating with SC 1955 ABC	
Scoring and Cutting	4.1
Premasking and Prespacing	4.3
Surface Preparation	5.1, 5.2
Storage, Maintenance and Film	6.5, 6.6
Application	5.4, 5.5, 5.6
3M Graphic Warranties matrix	

For Further Assistance

For help on specific questions relating to 3M™ Scotchcal™ Screen Printing Ink Series 1900, or any other 3M Commercial Graphics Division products, contact your local 3M Technical Service representative or

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