

# MICRO-ENCAPSULATED PERFUMES & OTHER FINISHES



Micro-encapsulation is a fascinating process in which microscopic droplets or particles are wrapped with a protective polymeric coating. In simple terms, micro-encapsulation provides a miniature container that protects its contents from evaporation, oxidation, and contamination until its release is triggered.

For most applications, the capsule diameter would be in the range of 3-8 microns (one micron = one thousandth of a millimetre). These capsules remain invisible to the naked eye but under high power, microscopes open up an exciting insight into this curious dimension.

For example, an area of one square centimetre could contain one million capsules if placed side by side. This concentration allows for multiple releases from the same area until all of the capsules are broken.

Encapsulated fragrances can be applied onto textiles to enhance a garment, promote a product or mask a manufacturing malodour.

Adding benefit to a textile is also achievable by applying an encapsulated moisturiser, essential oils, certain vitamins and even insect repellent.

## 1. Summary

LJ Specialities Aroma Granules are a range of dispersed pastes in which various kinds of fragrance oil are encapsulated to give wash durable textile finishes. These can be applied using a range of techniques such as padding, exhaustion, printing or coating. The Aroma Granule range is complimented by a range of other micro-encapsulated products to provide effects such as skin benefits, insect repellency, temperature control and colour change effects (ITOTHERMOCHROMIC & ITOFINISH UV).

### IFRA/RIFM accredited fragrances.

All of the standard fragrances available from LJS, use fragrance oil that conform to guidance published by the International Fragrance Association (IFRA) and by Research Institute for Fragrance Materials (RIFM).

The International Fragrance Association is an international organization composed of over 100 fragrances manufactures representing 15 countries. Its advisory committee review available data on fragrance material. Based upon this data, the IFRA makes recommendations on the safe use of fragrance materials. The IFRA guidelines are for the safe use of fragrance ingredients and are based on the evaluation by independent experts of all toxicological and dermatological data relating to the ingredient concentration and exposure to the final product.

The RIFM was formed in 1966 by the industry to carry out research on ingredients used in fragrances. The RIFM is an international organisation whose purpose is to assure the safety of perfumery materials. The RIFM accredited perfumery materials are subjected to strict guidelines, which cover the health and safety aspects of the perfume.

LJ Specialities have also subjected a selected number of the aroma granule fragrances to stringent evaluation to skin irritation. This assessment was undertaken by the Dermatology department of Queen's Medical Centre (Nottingham, England). The test results concluded that out of the 50 people under trial none showed any sign of skin irritation generated by the wearing

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**MagnaColours Limited**  
Upper Cliffe Road,  
Dodworth Business Park,  
Barnsley, S75 3SP, UK

T: 00 44 (0) 1226 731751  
F: 00 44 (0) 1226 731752  
E: [info@magnacolours.com](mailto:info@magnacolours.com)  
[www.magnacolours.com](http://www.magnacolours.com)

Company registered in  
England No. 01378495,  
VAT No. GB 997 3172 70



ISO EN 14001  
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of the aroma granule fragrance.

When developing new custom fragrances it may be necessary to use fragrances which are not IFRA/RIFM accredited.

## 2. Kinds:

LJ Specialties Aroma Granules list as follows: -

### a) Aroma Granule

**Fruity Aromas:** Apple, Banana, Lemon, Orange, Strawberry, Tutti Fruity

**Floral Aromas:** Bouquet, Camomile, Freesia, Jasmine, Lavender, Primavera, Rose, Rosemary, Wildflowers

**Other Aromas:** Aloe Down, Baby, Chocolate, Cola, Eucalyptus, Figi, Forest, Peppermint, Pine, Sandalwood, Shake me Fresh, Vanilla

### b) Other Encapsulates

**Skin Benefits:** Aloe Vera, Itofinish Kelp, Vitamin E, Shea Butter,

### c) Non-release micro-encapsulated products

**Temperature Control:** Itofinish PCM, Itofinish Cool MCP

**Colour Change effects:** Itothermochromic, Itofinish UV

Below is a list of individual oils that have Aroma Benefits and these benefits are widely accepted by the aromatherapy industry.

Oil	Uses
Camomile	May help with restlessness, insomnia, muscle tension, cuts, scrapes and is anti-infectious.
Eucalyptus	Can help open breathing passages, clears congestion, refreshing, reviving, improves mental clarity and alertness
Jasmine	Can offer skin benefits, reducing problems such as dry, greasy skin. Anti-depressant and nervous exhaustion.
Lavender	Calming, balances emotions, refreshing, helps promote restful sleep, anti-inflammatory, healing to the skin.
Lemon	Refreshing, increases alertness and helps decision-making.
Peppermint	Refreshing, stimulates the mind, improves mental clarity and concentration, and helps relieve fatigue and depression; relieve headaches; vapours opens breathing passages; analgesic and an insect repellent.
Pine	Refreshing, improves memory and mental clarity, promotes simplicity and direction; vapours opens breathing passages and can help respiratory problems.
Rose	Its beautiful fragrance is almost intoxicating and aphrodisiac like. It is also a stimulate and an elevating the mind, creating a sense of well being
Vitamin E	Proven to help the skin retain moisture and therefore has excellent moisturising effect on skin.

It is also possible to encapsulate you're our unique fragrance; this will incur a small development fee for the encapsulation of new oils and the development of the wash durability for that individual fragrance oil.

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## 3. General Composition and Nature of Aroma Granules

- **Appearance** : Milk-White Paste
- **Composition** : Perfumed capsules/Water/Thickener
- **Viscosity** : Approx. 2,000 cps at 25°C
- **Solid Content** : Approx. 50%
- **pH** : Approx. 6-7
- **Specific Gravity** : Approx. 1.00
- **Flammability** : Incombustible

## 4. Application Methods

### a) Pad

Pad through following trough mixture: -

**30g/l of Aroma Granules**

**80g/l of Itobinder AG**

**20g/l of Itosilicone LJ88**

Expected pick up 85%-90%

Make up to 1000 parts with water

Dry at 100°C for 1-2 mins

Cure at 140°C for 2 minutes (Do not exceed 150°C as this will cause destruction of the capsules)

### b) Exhaust

Set bath at 30°C with goods circulating

Add 3% of Pre diluted Itofix EZF

Raise to 50°C rapid rise and run for 10-25 minutes

Drain bath, fill and give a 2 minute rinse with cold water, then drain again

Fill bath and raise to 50°C rapid rise, add well dispersed 1-3% of Aroma Granule and run for 25 minutes

Add well dispersed 8% of ITOBINDER AG and run for a further 25 minutes

Drain bath and unload

Hydro extract goods

Dry (temperature must not exceed 150°C)

### c) Print

Aroma Granule 5% - 30 %

Print Paste 70% - 95% Total (100%)

#### Process:

70-120 Mesh Screen Printing - Pre-Drying  
- Baking at the temperature of 120°C for 3 Minutes.

#### Viscosity Adjustment:

If the viscosity adjustment is required depending upon printing machines, screen mesh or material-cloth:

- Method to increase viscosity: Water soluble thickener or acrylic acid thickener should be used.

- Method to decrease viscosity: A small amount of water (within 10%) should be used.

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5. **N.B. Please kindly pay attention to the following points when handling Aroma Granules.**

## Shelf Life:

6 Months - However this means that capsule component is likely to precipitate and coagulate, the capsule itself doesn't change in quality within one year if stored in a cool and dark place. However, it is possible that Aroma Granules which have elapsed over one year as well as the products processed with it will have slightly different fragrance from the initial one. Further, if separation or precipitation occurs during storage, please kindly stir lightly.

## Storage:

It should be stored avoiding above 40°C or below 5°C.

## Use:

When it is used, capsule component may slightly precipitate at the bottom of the container, therefore please kindly stir it lightly immediately before use and weigh accordingly.

## Washing:

No toxic substance is contained in the component of this Granule, however it may be possible that the sensitive skin can get a rash through direct contact with this, therefore please flush with water when it is contacted with skin.

## Process:

Since the environment is filled with dust through volatilisation of perfume during processing, it is desirable to ventilate well.

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