

# Product Information

## Personal Care

DOW CORNING

# *Dow Corning*<sup>®</sup> HMW 2220

## Non-Ionic Emulsion

### FEATURES

- Small particle size emulsion of an extremely high viscosity polymer
- Ease of formulation/cold processing
- Compatible with non-ionic, cationic and anionic surfactants systems
- Not tested on animals

### BENEFITS

#### Skin care

- Imparts rich feel to skin care formulations
- Wash-off resistance
- Film barrier properties
- Viscosity builder for water-in-silicone systems

#### Body wash

- Superior foam profile
- Superior skin feel
- Dow Corning patented

#### Hair care

- Increased fragrance intensity
- Prolonged fragrance release
- Prolonged hair color retention (color lock)
- Good wet/dry-detangling and smoothness without weighing hair down

**INCI NAME: Divinyldimethicone/Dimethicone Copolymer and C12-13 Pareth-23 and C12-13 Pareth-3**

### APPLICATIONS

*Dow Corning* HMW 2220 Non-Ionic Emulsion has been designed as a unique way of incorporating high viscosity polymer ( $>120 \times 10^6$  mm<sup>2</sup>/s) into water-based systems. This product can be used in skin care and body wash applications including:

- Skin creams
- Facial cleansers
- Shower gels

This product can be used in hair care applications including:

- Shampoos
- Rinse-off and leave-on conditioners
- Styling products

### TYPICAL PROPERTIES

Specification Writers: These values are not intended for use in preparing specifications. Please contact your local Dow Corning sales office or your Global Dow Corning Connection before writing specifications on this product.

| Parameter                          | Unit               | Value  |
|------------------------------------|--------------------|--|
| Appearance                         |                    | Milky-white to white liquid, free from particulate |
| Odor                               |                    | Characteristic odor                                |
| Silicone content                   | wt%                | 60   |
| Internal phase viscosity at 0.01Hz | mm <sup>2</sup> /s | $>120,000,000$                                     |
| pH                                 |                    | 5.0-7.0  |
| Particle size D50 (Microtrac)      |                    | $<0.6$ microns                                     |
| Suitable diluent                   |                    | Water  |
| Emulsifier type                    |                    | Non-ionic  |
| Preservative system                |                    | Phenoxyethanol                                     |
| Microbiological evaluation         | cfu/ml             | 10 maximum   |

### DESCRIPTION

*Dow Corning*<sup>®</sup> HMW 2220 Non-Ionic Emulsion is a 60% non-ionic emulsion of a very high viscosity ( $>120 \times 10^6$  mm<sup>2</sup>/s at 0.01Hz) polydimethylsiloxane/vinyl copolymer

### HOW TO USE

*Dow Corning* HMW 2220 Non-Ionic Emulsion is best added at temperatures below 50°C (122°F) to minimize risk of emulsion separation. The recommended addition level is 2 to 5% silicone active.

## HOW TO APPLY

### Shower gels

*Dow Corning* HMW 2220 Non-Ionic Emulsion should be added at the end of the process after the final water addition.

### Skin creams

*Dow Corning* HMW 2220 Non-Ionic Emulsion should be added at the end after the preparation of the cream base. Avoiding high shear mixing is important to prevent the emulsion breaking.

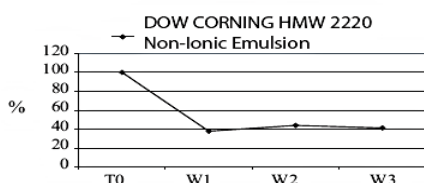
## BENEFITS

### Pure product data

#### Wash-off resistance

40% *Dow Corning* HMW 2220 Non-Ionic Emulsion remains on the skin after 3 washes.

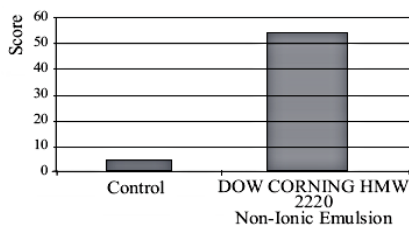
Figure 1: Wash-off resistance



### Skin protection/ Film barrier properties

*Dow Corning* HMW 2220 Non-Ionic Emulsion forms a protective film on skin.

Figure 2: Skin protection.



### Formulated product data

#### Shower gel

#### Sensory data

*Dow Corning* HMW 2220 Non-Ionic Emulsion generates foam faster than the control and gives a more creamy foam. Wet skin is more slippery and drying is smoother and more supple.

### Test results

#### Shower gel deposition

1. Spectrum of neat skin of volar forearm is taken
2. The test zone is washed with the shower gel
3. A spectrum is taken and the relative quantity of silicone is measured

Figure 3: Silicone deposition semi-quantitative

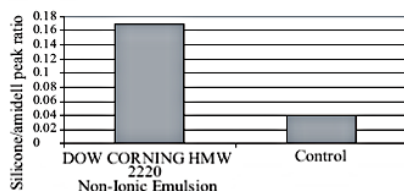
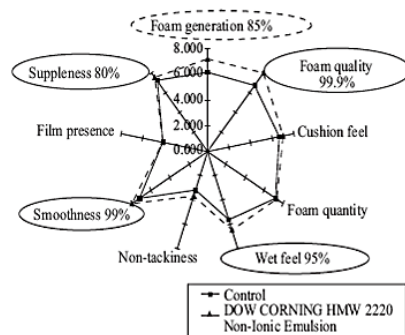


Figure 4: Sensory profile for Shower gel containing

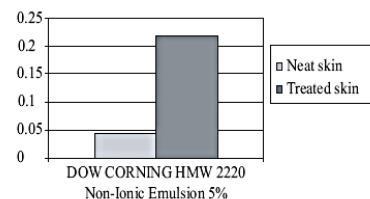
*Dow Corning* HMW 2220 Non-Ionic Emulsion versus Control.



### Deposition data

The presence of silicone can be detected on the skin after the use of the shower gel.

Figure 5: Deposition of DOW CORNING HMW 2220 Non-Ionic Emulsion on skin.



### Water in silicone creams

#### Sensory data

A water-in-silicone cream containing 2.3% of *Dow Corning* HMW 2220 Non-Ionic Emulsion has been found to have a significantly different feel (99% confidence level) from the same cream without the silicone. In addition, the sensory threshold has been found to be very low to provide expected benefits.

### Viscosity data

*Dow Corning* HMW 2220 Non-Ionic emulsion helps increase the viscosity of water-in-silicone creams (See Table 1).

## HANDLING PRECAUTIONS

Product safety information required for safe use is not included. Before handling, read product and safety data sheets and container labels for safe use, physical and health hazard information. The material safety data sheet is available on the Dow Corning website at [www.dowcorning.com](http://www.dowcorning.com). You can also obtain a copy from your local Dow Corning sales representative or Distributor or by calling your local Dow Corning Global Connection.

## **USABLE LIFE AND STORAGE**

When stored between 5°C (41°F) and 32°C (89°F) in the original unopened containers, this product has a usable life of 10 months from the date of production.

## **PACKAGING**

This product is available in 20kg pails and 200kg drums.

Samples are available in 250g.

## **LIMITATIONS**

This product is neither tested nor represented as suitable for medical or pharmaceutical uses.

## **HEALTH AND ENVIRONMENTAL INFORMATION**

To support Customers in their product safety needs, Dow Corning has an extensive Product Stewardship organization and a team of Product Safety and Regulatory Compliance (PS&RC) specialists available in each area.

For further information, please see our website, [www.dowcorning.com](http://www.dowcorning.com) or consult your local Dow Corning representative.

## **LIMITED WARRANTY INFORMATION - PLEASE READ CAREFULLY**

The information contained herein is offered in good faith and is believed to be accurate. However, because conditions and methods of use of our products are beyond our control, this information should not be used in substitution for customer's tests to ensure that our products are safe, effective, and fully satisfactory for the intended end use. Suggestions of use shall not be taken as inducements to infringe any patent.

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Your exclusive remedy for breach of such warranty is limited to refund of purchase price or replacement of any product shown to be other than as warranted.

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**Table 1: Viscosity data**

| <i><b>Ingredients</b></i>                                | <i><b>Control</b></i> | <i><b>Dow Corning HVW 2220<br/>Non-Ionic Emulsion</b></i> |
|--|-----------------------|---|
| <i>Dow Corning</i> <sup>®</sup> 5225C<br>Formulation Aid | 10%                   | 10%   |
| XIAMETER <sup>®</sup> PMX-0245 Cyclopentasiloxane        | 20%                   | 18.6  |
| <b>Phase B</b>   |                       |   |
| <i>Dow Corning</i> HMW 2220<br>Non-Ionic Emulsion        |                       | 2.3%  |
| NaCl   | 2.0%                  | 2.0%  |
| Water  | 68%                   | 67.1%   |
| Viscosity 24 hours                                       | 19200                 | 72800   |
| 3 weeks  | 16000                 | 46400   |