

Certificate of Analysis

(Representative Sample Certificate)

Product Name: Polysorbate 20 **Lot Number:** Not available (data may vary slightly with different lots or batches)
INCI Name: Polysorbate 20 **Expiration:** 24 months from production date
CAS Number: 9005-64-5

| Property | Specifications | Analysis |
|--|--------------------|--------------|
| Identification (IR) (MA-1188) | Passes test | Pass |
| C10 (Capric) (MA-1296) | 10.0% MAX | 5.5% |
| C12 (Lauric) (MA-1296) | 40.0 - 60.0% | 49.4% |
| C14 (Myristic) (MA-1296) | 14.0 - 25.0% | 21.6% |
| C16 (Palmitic) (MA-1296) | 7 - 15% | 11.7% |
| C18 (Stearic) (MA-1296) | 11.0% MAX | 1.9% |
| C18:1 (Oleic) (MA-1296) | 11.0% MAX | 4.2% |
| C18:2 (Linoleic) (MA-1296) | 3.0% MAX | 0.1% |
| C6 (Caproic) (MA-1296) | 1.0% MAX | 0.1% |
| C8 (Caprylic) (MA-1296) | 10.0% MAX | 4.4% |
| Identification FCC (MA-1297) | Passes test | Pass |
| Lauric Acid (C12) Content (MA-1298) | 15 - 17 g/100g | 16.9 g/100g |
| Acid Value (C12) | 250 - 275 mg KOH/g | 252 mg KOH/g |

Disclaimer: This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any other process. Such information is to be the best of the company's knowledge and believed accurate and reliable as of the date indicated. However, no representation, warranty or guarantee of any kind, express or implied, is made as to its accuracy, reliability or completeness and we assume no responsibility for any loss, damage or expense, direct or consequential, arising out of use. It is the user's responsibility to satisfy themselves as to the suitability & completeness of such information for their own particular use.

| | | |
|---|---------------------------------|-------------------------|
| (MA-1298) | | |
| Oxyethylene Content (MA-1327) | 70.0 - 74.0% | 70.0% |
| Dioxane (MA-1421) | 10 ppm MAX | 0 ppm |
| Residual Ethylene Oxide (MA-1421) | 1 ppm MAX | 0 ppm |
| Hydroxyl Value (MA-525) | 96.0 - 108.0 mg KOH/g | 102.4 mg KOH/g |
| Ignition Residue (MA-612) | 0.25% MAX | 0.03% |
| Acid Value (MA-638) | 2.0 mg KOH/g MAX | 1.3 mg KOH/g |
| Viscosity @ 25° C (Brookfield) (MA-664) | 275.00 - 480.00 cPs | 378.0 cPs |
| Arsenic (As) (MA-705) | 1 ppm MAX | 1 ppm |
| Lead (Pb) (MA-705) | 1 ppm MAX | 1 ppm |
| Heavy Metals (MA-724) | 10 ppm MAX | 0 ppm |
| pH (5wt% Aqueous Solution) @ 25° C (MA-729) | 5.0 - 7.0 | 5.65 |
| Appearance @ 25° C (MA-742) | Yellowish clear liquid | Pass |
| Peroxide Value (MA-780) | 10.0 mEq/1000g MAX | 3.0 mEq/1000g |
| Density @ 25° C (MA-798) | 1.080 - 1.120 g/cm ³ | 1.097 g/cm ³ |
| Saponification Value (MA-810) | 40.0 - 50.0 mg KOH/g | 48.7 mg KOH/g |
| Moisture (MA-875) | 3.0% MAX | 2.2% |
| Color (Gardner) @ 25° C (MA-881) | 2 MAX | 1.6 |

“Certified in compliance with the terms of the US-Canada Organic Equivalency Arrangement. The above data was obtained using the test indicated and is subject to the deviation inherent in the test method. Results may vary under other test methods or conditions. This report is not to be signed. All data are as per our supplier.

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