

## Certificate of Analysis

Date of Testing: 2022-03-08 09:38:24  
Date of Next Testing: 2026-03-07 09:38:24  
Product Name: **TWEEN® 20**  
CAS Number: 9005-64-5  
Specifications & Purity: viscous liquid  
Lot #: C2205146  
SKU #: **T104863**  
**Analysis:** **080828**  
Storage Temperature: Room temperature

| Parameter             | Limit Values          | Result                |
|-----------------------|-----------------------|-----------------------|
| Water by Karl Fischer | 0-3 (%)               | 2.50 %                |
| Acid Value            | 0-2.2 (mg/g)          | 0.30 mg/g             |
| Residual Ethylene     | 0-1 (ppm)             | 0.50 ppm              |
| Viscosity(25 °C,neat) | 275-480 (cP)          | 330.00 cP             |
| Hydroxy Value         | 96-108 (mgKOH/g)      | 98.40 mgKOH/g         |
| Dioxane Content       | 0-10 (ppm)            | 1.00 ppm              |
| Saponification value  | 40-50 (mg/g)          | 41.30 mg/g            |
| Density (25°C)        | 1.08-1.12             | 1.10                  |
| Appearance (T104863)  | Yellow oily liquid    | Yellow oily liquid    |
| Infrared spectrum     | Conforms to Structure | Conforms to Structure |



John Su  
QA & QC Manager