

Shanghai Aladdin Biochemical Technology Co., LTD  
809 Chuhua Branch Road, Fengxian District, Shanghai 201400, China

## Certificate of Analysis

Date of Testing: 2022-12-17 10:17:54  
Date of Next Testing: 2026-12-16 10:17:54  
Product Name: **TWEEN® 20**  
CAS Number: 9005-64-5  
Specifications & Purity: viscous liquid  
Lot #: L2214964  
SKU #: **T104863**  
**Analysis:** **162965**  
Storage Temperature: Room temperature

| Parameter              | Limit Values          | Result                |
|------------------------|-----------------------|-----------------------|
| Water by Karl Fischer  | 0-3 (%)               | 2.80000 %             |
| Acid Value             | 0-2.2 (mg/g)          | 0.50000 mg/g          |
| Residual Ethylene      | 0-1 (ppm)             | 0.20000 ppm           |
| Hydroxy Value          | 96-108 (mgKOH/g)      | 100.20000 mgKOH/g     |
| Dioxane Content        | 0-10 (ppm)            | 5.50000 ppm           |
| Saponification value   | 40-50 (mg/g)          | 42.50000 mg/g         |
| Viscosity(25 °C, neat) | 275-480 (cP)          | 280.00000 cP          |
| Density (25°C)         | 1.08-1.12             | 1.08200               |
| Appearance (T104863)   | Yellow oily liquid    | Yellow oily liquid    |
| Infrared spectrum      | Conforms to Structure | Conforms to Structure |



John Su  
QA & QC Manager