

## Certificate of Analysis

Date of Testing: 2023-07-25 15:25:48  
Date of Next Testing: 2027-07-24 15:25:48  
Product Name: **TWEEN® 20**  
CAS Number: 9005-64-5  
Specifications & Purity: viscous liquid  
Lot #: G23211024  
SKU #: **T104863**  
**Analysis:** **241729**  
Storage Temperature: Room temperature

Parameter	Limit Values	Result
Water by Karl Fischer	0-3 (%)	2.38 %
Acid Value	0-2.2 (mg/g)	0.50 mg/g
Residual Ethylene	0-1 (ppm)	1.00 ppm
Hydroxy Value	96-108 (mgKOH/g)	99.80 mgKOH/g
Dioxane Content	0-10 (ppm)	1.00 ppm
Saponification value	40-50 (mg/g)	43.20 mg/g
Viscosity(25 °C, neat)	275-480 (cP)	295.00 cP
Density (25°C)	1.08-1.12	1.08
Infrared spectrum	Conforms to Structure	Conforms to Structure
Appearance (T104863)	Yellow oily liquid	Yellow oily liquid



John Su  
QA & QC Manager