

## Certificate of Analysis

Date of Testing: 2023-01-06 17:38:11  
Date of Next Testing: 2027-01-05 17:38:11  
Product Name: **TWEEN® 20**  
CAS Number: 9005-64-5  
Specifications & Purity: viscous liquid  
Lot #: A2303334  
SKU #: **T104863**  
**Analysis: 103512**  
Storage Temperature: Room temperature

Parameter	Limit Values	Result
Water by Karl Fischer	0-3 (%)	2.64 %
Acid Value	0-2.2 (mg/g)	0.50 mg/g
Residual Ethylene	0-1 (ppm)	0.20 ppm
Hydroxy Value	96-108 (mgKOH/g)	97.70 mgKOH/g
Dioxane Content	0-10 (ppm)	1.00 ppm
Saponification value	40-50 (mg/g)	41.20 mg/g
Density (25°C)	1.08-1.12	1.09
Viscosity(25 °C, neat)	275-480 (cP)	282.00 cP
Infrared spectrum	Conforms to Structure	Conforms to Structure
Appearance (T104863)	Yellow oily liquid	Yellow oily liquid



John Su  
QA & QC Manager