

1-Butanol  
PHOTREX® Reagent  
For Spectrophotometry  
(butyl alcohol)



Material No.: 9189-01  
Batch No.: 0000041908  
Manufactured Date: 2013/05/21  
Retest Date: 2014/05/20

## Certificate of Analysis

| Test                                                                                                 | Specification    | Result     |
|------------------------------------------------------------------------------------------------------|------------------|------------|
| ACS – Assay ( $\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_2\text{OH}$ ) (by GC, corrected for water) | $\geq 99.4 \%$   | 100.0      |
| ACS – Color (APHA)                                                                                   | $\leq 10$        | 5          |
| ACS – Residue after Evaporation                                                                      | $\leq 0.0005 \%$ | $< 0.0001$ |
| ACS – Titrable Acid ( $\mu\text{eq/g}$ )                                                             | $\leq 0.8$       | 0.1        |
| ACS – Butyl Ether ( $\text{C}_8\text{H}_{18}\text{O}$ )(by GC)                                       | $\leq 0.2 \%$    | $< 0.1$    |
| Carbonyl Compounds – Butyraldehyde                                                                   | $\leq 0.01 \%$   | $< 0.01$   |
| Water (by KF, coulometric)                                                                           | $\leq 0.05 \%$   | 0.03       |
| Ultraviolet Absorbance (1.00-cm cell vs. water) – 400–300 nm                                         | $\leq 0.01$      | $< 0.01$   |
| Ultraviolet Absorbance (1.00-cm cell vs. water) – 280 nm                                             | $\leq 0.02$      | $< 0.01$   |
| Ultraviolet Absorbance (1.00-cm cell vs. water) – 260 nm                                             | $\leq 0.04$      | $< 0.01$   |
| Ultraviolet Absorbance (1.00-cm cell vs. water) – 240 nm                                             | $\leq 0.10$      | 0.03       |
| Ultraviolet Absorbance (1.00-cm cell vs. water) – 220 nm                                             | $\leq 0.50$      | 0.38       |
| Ultraviolet Absorbance (1.00-cm cell vs. water) – 215 nm                                             | $\leq 1.00$      | 0.69       |

For Laboratory, Research or Manufacturing Use

Product Information (not specifications):

Boiling Point (typical)..... 117.7 °C.

Windows of Infrared Transmittance (0.1-mm path, 50–100% T),  $\mu\text{m}$ :

2.0 – 2.8 ; 4.3 – 6.0

Material No.: 9189-01  
Batch No.: 0000041908

Country of Origin: US



Phillipsburg, NJ 9001:2008, 14001:2004  
Paris, KY 9001:2008  
Mexico City, Mexico 9001:2008  
Deventer, The Netherlands 9001:2008, 14001:2004, 13485:2003  
Gliwice, Poland 9001:2008, 17025:2005  
Selangor, Malaysia 9001:2008  
Dehradun, India, 9001:2008, 14001:2004, 13485:2003  
Mumbai, India, 9001:2008, 17025:2005  
Panoli, India 9001:2008

A handwritten signature in white ink on a blue background, reading "Richard M Siberski".

Richard M Siberski  
Global Director of Quality Assurance

For questions on this Certificate of Analysis please contact Technical Services at 855.282.6867 or +1.610.573.2600  
Avantor™ Performance Materials Inc.

3477 Corporate Parkway, Suite #200, Center Valley, PA 18034, U.S.A. Phone: 610.573.2600 . Fax: 610.573.2610