

All data taken at Pacific Northwest National Laboratory (PNNL)

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### **SAMPLE CONDITIONS & PHYSICAL PROPERTIES**

Chemical name	Bisphenol A diglycidyl ether	
Chemical formula	$C_{21}H_{24}O_4$	
Synonyms	2,2-Bis[4-(glycidyloxy)phenyl]propane; 4,4'-Isopropylidenediphenol diglycidyl ether; BADGE; Bisphenyl A diglycidyl ether; D.E.R. <sup>TM</sup> 332	
CAS number	1675-54-3	
Location of field sample	n/a	
History of sample	n/a	
Molecular Weight	340.41 g/mole	
Melting Point	40 °C	
Boiling Point	n/a	
Density (25 °C)	1.16 g/cm <sup>3</sup>	
Hardness, Mohs scale	n/a	
Crystallography:		
Cell dimension	a = Å b = Å c = Å	
Crystal system		
H-M symbol (point gr)		
Space group		
H-M symbol (space gr)		
Crystal habit		
Color	Clear/colorless	
Diaphaneity	Transparent	
Particle size	n/a	
Particle size assessment	n/a	
Supplier	Sigma	
Stated purity	n/a	
Date packed	18 October 2016	Weight: 2.891grams
Synthesis method	n/a	
Synthesis reference	n/a	
Texture	Viscous pseudo-solid	
Physical state	Semi-solid/liquid	
Surface roughness	n/a	
Elemental composition	n/a	
Isotopic composition	n/a	
Moisture content	n/a	
Temperature of sample	25 ± 2 °C	
Substrate	none	

## INSTRUMENT PARAMETERS

### Tensor 37 FT-IR manufactured by Bruker Optics

External diffuse reflectance accessory	A 562-G integrating sphere
Sphere diameter	75 mm
Angle to normal incidence	14.8°
Sphere opening diameter	19 mm (entrance port)
Spectral range	7,500 to 600 $\text{cm}^{-1}$ saved; 7500 to 600 $\text{cm}^{-1}$ reported
Beamsplitter	Ge on KBr
Detector (dia. Det. Port in sphere)	2×2 mm, 60° field of view MCT (550; 0.9); 1 cm
Apodization function	Blackman-Harris 3-term
Aperture	6 mm
Coadded scans	2048
Scanner speed	40 kHz
Switch gain on	512 points
Low pass filter	Open
Scan technique	double-sided, forward-backward
Non-linear correction	On
High and low folding limit	15800.54-0.00 $\text{cm}^{-1}$
Phase resolution	32.00
Phase correction mode	Mertz
Zerofilling	4×
Wavenumber accuracy	$\pm 0.4 \text{ cm}^{-1}$
Spectral resolution	4 $\text{cm}^{-1}$
Accuracy verification	10/28/2015
Wavelength vetted on:	ICL polystyrene standard #0009-7394-0025A, thin film
Reflectance:	$\pm 2\%$ using SRS reflectance standards 50-010-DH27B-4878



Figure 1: The Bruker 562-G integrating sphere (a) and Tensor 37 (b)

# Photographs of sample Bisphenol A Diglycidyl Ether



Figure 2: Bisphenol A diglycidyl ether in Sigma container.



Figure 3: Bisphenol A diglycidyl ether loaded in IR sample cup.