



# VORANOL™ VORACTIV™ VV 6010

Catalytically Active Polyether Polyol

## Description

VORANOL™ VORACTIV™ VV 6010 Polyether Polyol has a moderate level of built-in catalytic activity and its usage allows either a significant reduction or elimination of the amine catalyst package.

For assessment of catalytic activity, the following comparison can be made:

1 pph Niox A1 ~ 3 pph Dabco 33LV ~ 4 pph DMEA

The combined amines, calculated as Niox A1 equivalents provides the approximation:

100 pph VORANOL VORACTIV VV 6010 Polyol ~ 0.035 pph Niox A1 equivalents.

Starting formulations can be provided upon request.

## Typical Properties

Property <sup>(1)</sup>	Value	Method
OH Number (mg KOH/g)	55.1 - 57.8	ASTM D4274-94
Water, Maximum (%)	0.06	ASTM E203-96
Color (APHA)	100 Max.	ASTM D4890-93
Viscosity (cSt @ 25°C)	420 - 480	ASTM D445-94
Density		
lbs/gal 77°F	8.482	
gm/cc 25°C	1.016	
Specific Gravity (gm/cc, 25°C)	1.019	
Flash Point (PMCC)	230°C	
Specific Heat (cal/gm °C)		
40°C	0.441	
60°C	0.454	
100°C	0.478	
Thermal Conductivity (gm cal/cm sec °C)		
35°C	35 x 10 <sup>-5</sup>	
65°C	34.4 x 10 <sup>-5</sup>	
95°C	33.7 x 10 <sup>-5</sup>	
Vapor Pressure (mm Hg)		
25°C	< 0.01	

(1) Typical properties, not to be construed as specifications.

## Applications

VORANOL™ VORACTIV™ VV 6010 Polyether Polyol was developed especially for the production of flexible slabstock foam.

## Safety and Handling

VORANOL™ VORACTIV™ Polyether Polyols generally present no significant hazard in use when simple precautions are followed. However, some polyether polyols are hazardous. Before working with VORANOL VORACTIV Polyether Polyols it is necessary to understand the hazards involved in handling all of the components, and to establish and follow safe work procedures. Safety Data Sheets (SDS) or Material Safety Data Sheets (MSDS), product literature, and safe handling and storage information are available for the polyurethane materials supplied by Dow. Recommendations for handling, storage and disposal of any ingredient not furnished by Dow should be acquired from the supplier.

## Toxicity and First Aid

### Skin and Eyes

When working with VORANOL™ VORACTIV™ Polyether Polyols, avoid contact of polyol with eyes or skin. Safety glasses are suggested for use with most polyols. However, some VORANOL VORACTIV Polyether Polyols require that chemical workers' goggles be worn. Skin contaminated with polyols should be washed with soap and plenty of water. If polyol contacts eyes, flush with plenty of low-pressure flowing water. If irritation occurs from contact with polyols, get medical attention.

### Ingestion

Typically, polyols are low to very low in acute oral toxicity. If a polyol is swallowed, seek medical attention.

### Inhalation

VORANOL™ VORACTIV™ Polyether Polyols typically do not present a significant problem from inhalation. If any adverse effects should occur, get the affected person to fresh air and obtain medical attention.

## Fire and Explosion

VORANOL™ VORACTIV™ Polyether Polyols will burn under certain conditions and can explode if heated to decomposition temperature in a confined area. VORANOL VORACTIV Polyether Polyols are Class IIIB Combustible Liquids under OSHA. Polyol fires can be extinguished with water fog, carbon dioxide or dry chemicals. Polyol fires not involving isocyanate may be extinguished with alcohol foam. Personnel fighting isocyanate fires or polyol fires involving isocyanate should wear pressure demand, self-contained breathing apparatus and full protective clothing as protection against nitrogen dioxide fumes and isocyanate vapors.

## Spills and Disposal

Waste polyol should be burned in an adequate incinerator. Landfill disposal of polyols is not recommended because of the chemical's water solubility. Waste disposal of either isocyanate or polyol should always be in accordance with federal, state and local environmental laws and regulations.

For More  
Information:

For more information, consult, *A Guide to Safe Handling and Use of VORANOL™ Polyether Polyols* (Form number: 109-01609) from Dow, or contact your Dow representative. Also, consult the SDS or MSDS for this product.

Customer Notice

Dow encourages its customers to review their applications of Dow products from the standpoint of human health and environmental quality. To help ensure that Dow products are not used in ways for which they were not intended or tested, Dow personnel are willing to assist in dealing with ecological and product safety considerations. Your Dow representative can arrange the proper contacts.

Medical  
Application  
Policy

Dow will not knowingly sell or sample any product or service ("Product") into any commercial or developmental application that is intended for:

- (a) permanent (long term) contact with internal body fluids or internal body tissues. Long term is a use which exceeds 72 continuous hours (except 30 days for PELLETHANE™ Polyurethane Elastomers);
- (b) use in cardiac prosthetic devices regardless of the length of time involved (cardiac prosthetic devices include, but are not limited to, pacemaker leads and devices, artificial hearts, heart valves, intra-aortic balloons and control systems and ventricular bypass assisted devices);
- (c) use as a critical component in medical devices that support or sustain human life; or
- (d) use specifically by pregnant women or in applications designed specifically to promote or interfere with human reproduction.

Additionally, all Products intended for use in pharmaceutical applications must pass the then current Pharmaceutical Liability Guidelines. For additional information please contact your regular Dow representative.

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