

## **MONOXBAR™ SINGLE SACK™ OXYGEN SCAVENGER RESIN BLEND PRODUCT DATA SHEET**

### **DESCRIPTION**

MonOxbar™ Single Sack™ Oxygen Scavenger Resin Blend is intended to be used with PET packaging to provide increased protection of sensitive products from the oxidation of flavors, color, and vitamins. Because MonOxbar™ Single Sack™ Oxygen Scavenger Resin Blend offers a high degree of oxygen scavenging capacity per gram of material, it gives long-lasting protection and has a large amount of reserve capacity in the face of protracted storage or thermal abuse during empty- or filled-bottle distribution. Bottles made with MonOxbar™ Single Sack™ Oxygen Scavenger Resin Blend have PET-clear finishes without milkiness or black specks.

MonOxbar™ Single Sack™ Oxygen Scavenger Resin Blend is shipped pre-dried for convenient introduction into the injection molder or extruder without further drying. A nitrogen blanket is not needed during processing.

### **PROCESSING**

MonOxbar™ Single Sack™ Oxygen Scavenger Resin is supplied pre-dried and can be dosed into the injection molding machine using conventional dosing equipment capable of dosing accurately the recommended let down for the grade of choice. Constar recommends the use of gravimetric weigh scale dosers and blenders like those offered from MaGuire Products, Inc. Melt processing the material is done with typical conditions for PET on most platforms designed to manufacture PET containers. The product does not become active for scavenging oxygen until it is processed. However, the Monoxbar™ SingleSack™ material will absorb moisture, so any unused packages of material should be re-sealed well. The reheat-blow molding process is also done with conditions typical to the blow molding of PET containers.

More detailed information about melt processing and blow molding PET containers made with MonOxbar™ Single Sack™ Oxygen Scavenger Resin Blend can be found in the Processing Manual offered by Constar. Contact Constar or your Monoxbar™ SingleSack™ Resin Blend Distributor for a copy.

### **PERFORMANCE**

The oxygen barrier protection provided by MonOxbar™ Single Sack™ Oxygen Scavenger Resin depends on the Monoxbar grade and the let down used for each individual application. Gram for gram MonOxbar™ Single Sack™ Oxygen Scavenger Resin has the highest capacity known for any product of its kind. The charts below show the type of performance that can be expected for the different grades. As with any active material, colorant type may affect performance of any grade. When using V600-series grades, choice of PET resin may be important for obtaining optimal clarity and scavenging performance. Consult with Americhem about approved colorants and preferred PET resins.

#### **Americhem Europe Limited**

Head/Registered Office: Cawdor Street, Eccles, Manchester M30 0QF, UK  
Telephone: +44 (0)161 789 7832 Fax: +44 (0)161 787 7832

Luxembourg Office: 20 rue Eugène Ruppert, L-2453 Luxembourg  
Telephone: +352 26 49 36 65 Fax: +352 26 49 33 34

[www.americhem.com](http://www.americhem.com)

Registered Number: 1009410 England.

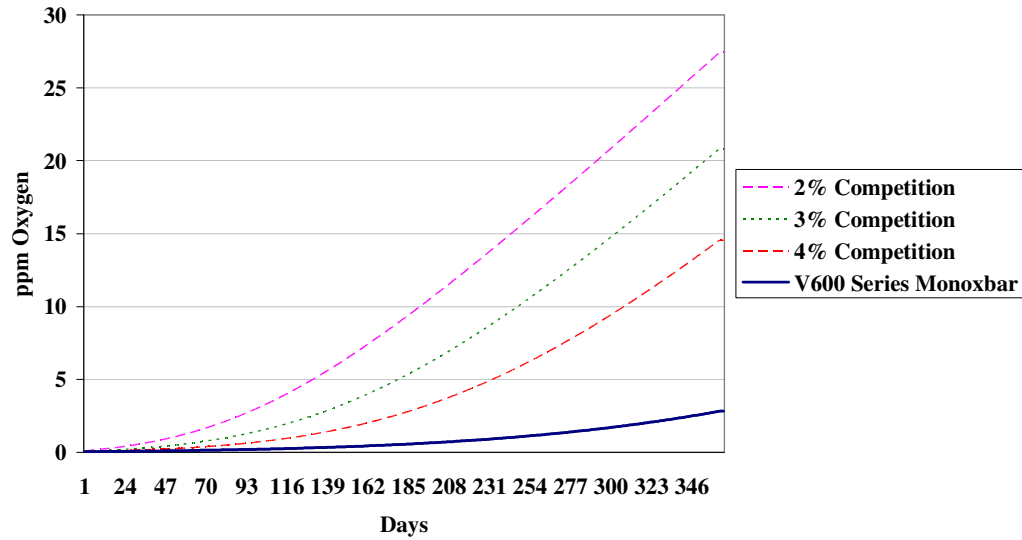
Revision 25 September 2007



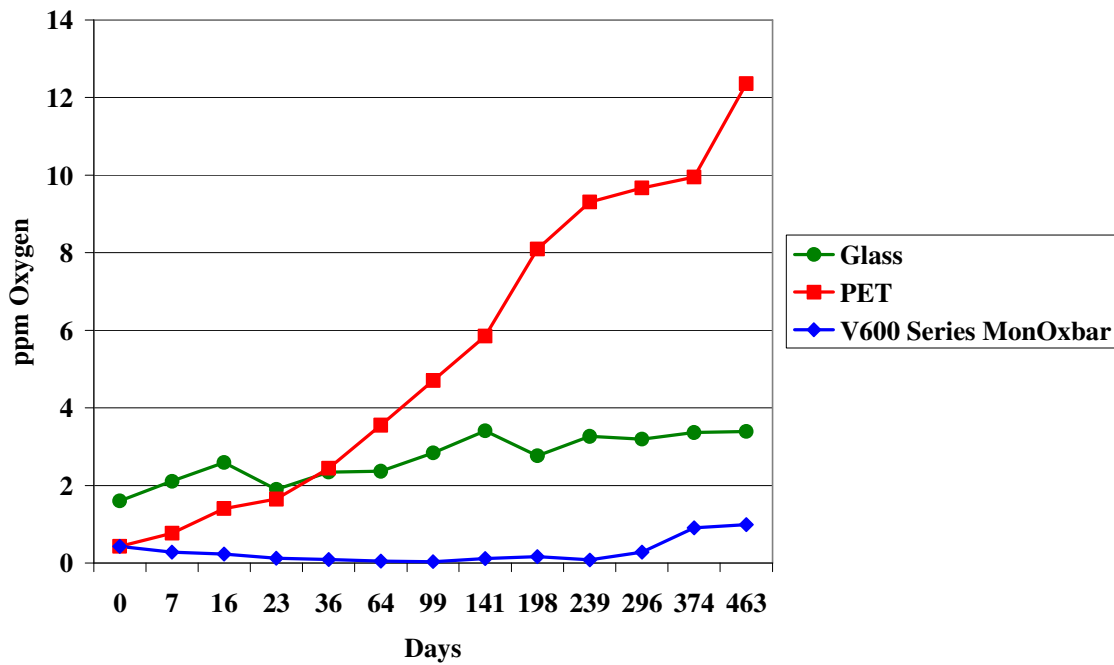
**americhem**<sup>®</sup>  
The Colour of Quality



Oxygen Ingress, 330mL Juice Bottle, 23 °C, M-Rule Model



Oxygen Ingress, 473ml Bottle, 23 °C



**Americhem Europe Limited**

Head/Registered Office: Cawdor Street, Eccles, Manchester M30 0QF, UK  
Telephone: +44 (0)161 789 7832 Fax: +44 (0)161 787 7832

Luxembourg Office: 20 rue Eugène Ruppert, L-2453 Luxembourg  
Telephone: +352 26 49 36 65 Fax: +352 26 49 33 34

www.americhem.com

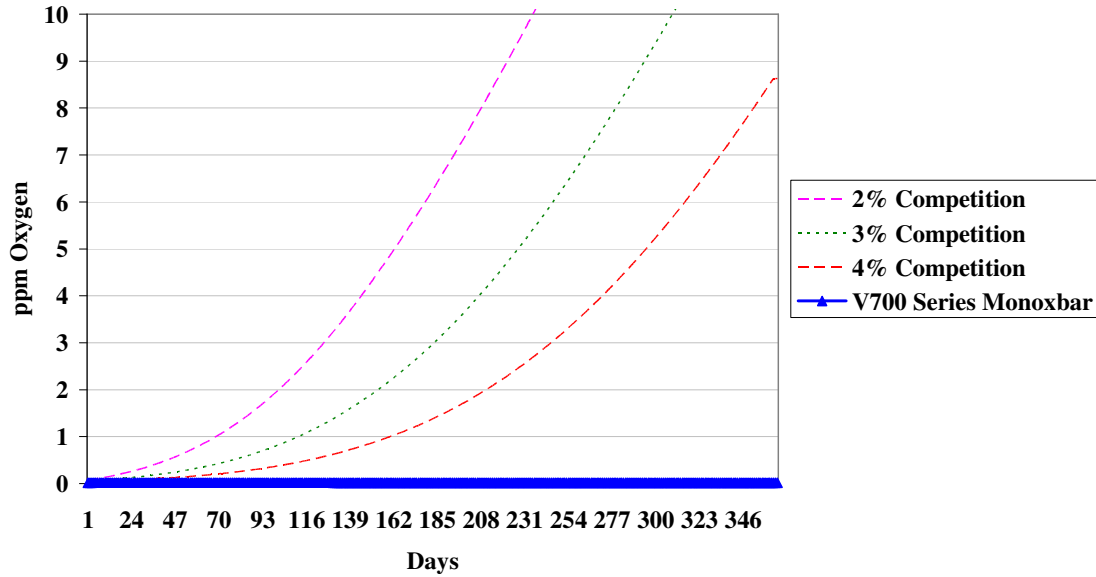
Registered Number: 1009410 England.



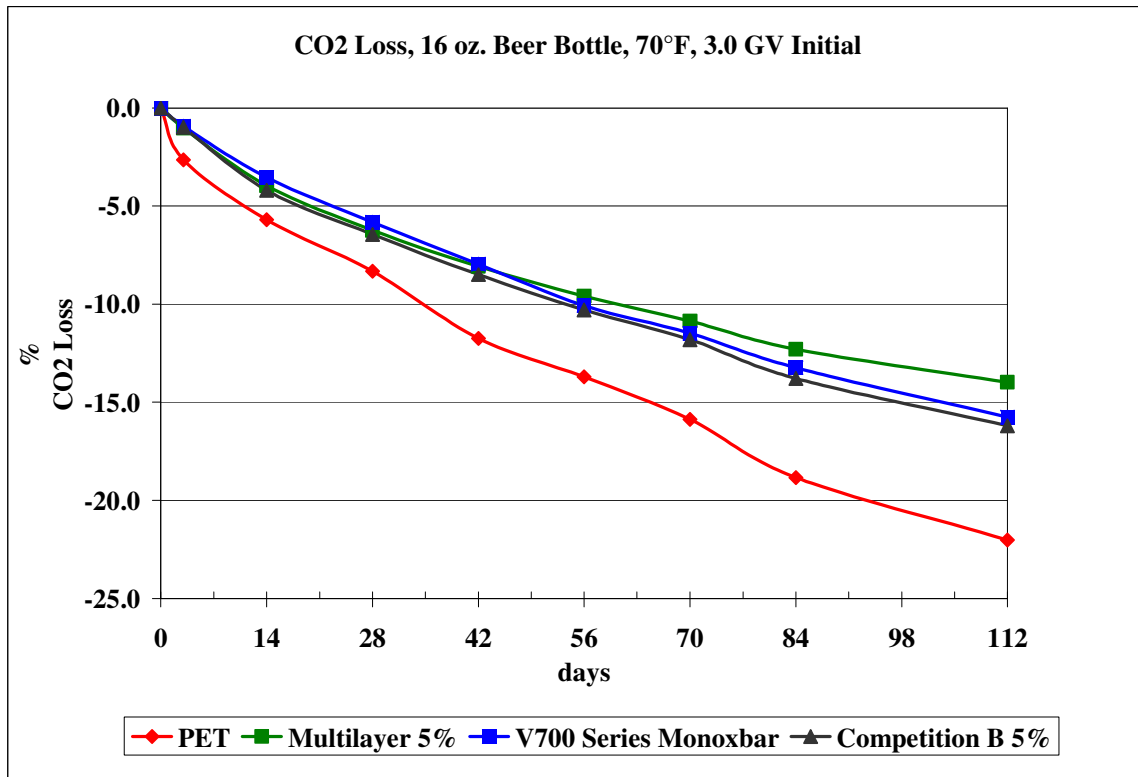
**americhem**<sup>®</sup>  
The Colour of Quality



Oxygen Ingress, 500 mL Beer Bottle, 23 °C, M-Rule Model



CO2 Loss, 16 oz. Beer Bottle, 70°F, 3.0 GV Initial



**Americhem Europe Limited**

Head/Registered Office: Cawdor Street, Eccles, Manchester M30 0QF, UK  
Telephone: +44 (0)161 789 7832 Fax: +44 (0)161 787 7832

Luxembourg Office: 20 rue Eugène Ruppert, L-2453 Luxembourg  
Telephone: +352 26 49 36 65 Fax: +352 26 49 33 34

www.americhem.com

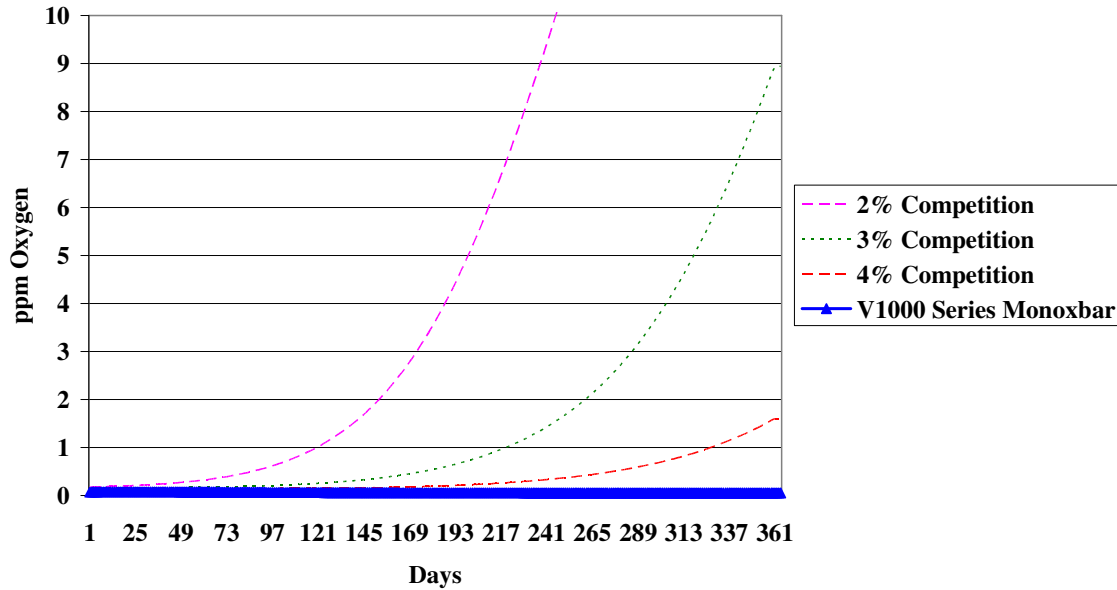
Registered Number: 1009410 England.



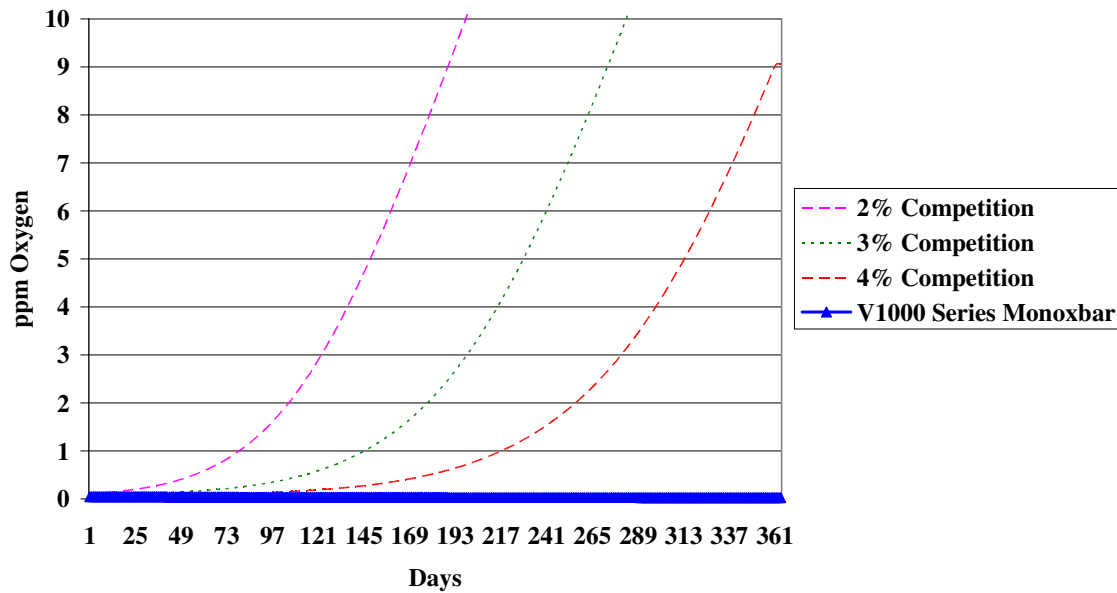
**americhem**<sup>®</sup>  
The Colour of Quality



Oxygen Ingress, 187 mL Wine Bottle, 23 °C, M-Rule Model



Oxygen Ingress, 750 mL Wine Bottle, 23 °C, M-Rule Model



**Americhem Europe Limited**

Head/Registered Office: Cawdor Street, Eccles, Manchester M30 0QF, UK  
Telephone: +44 (0)161 789 7832 Fax: +44 (0)161 787 7832

Luxembourg Office: 20 rue Eugène Ruppert, L-2453 Luxembourg  
Telephone: +352 26 49 36 65 Fax: +352 26 49 33 34

www.americhem.com

Registered Number: 1009410 England.

## **GRADES AND APPLICATIONS**

<b>Grade</b>	<b>Application</b>	<b>Recommended LDR</b>
V600 series	Juices	3%
V700 series	Beer	6%
V1000 series	Wine	4%

## **FOOD CONTACT STATUS**

Bottles made with MonOxbar™ Single Sack™ Oxygen Scavenger Resin Blend meet applicable food contact regulations in the United States and the European Union for permitted conditions of use. More specific information can be obtained from Constar or through your Distributor of MonOxbar™ Single Sack™ Oxygen Scavenger Resin Blend.

## **HEALTH AND SAFETY**

Although there are no known or expected hazards associated with handling this product, this and all industrial chemicals should be handled with caution. Avoid contact with skin, eyes and clothing. Wash thoroughly after handling. Dust generated from use of the product may be irritating to the eyes or respiratory system. Full information about handling, exposure, and hazards can be found on the MSDS.

## **RESIN IDENTIFICATION CODE**

PET containers made with MonOxbar™ Single Sack™ Oxygen Scavenger Resin Blend may be marked with the “1 PETE” plastic resin identification code.

## **SPECIFICATIONS**

Specifications for the individual grades of MonOxbar™ Single Sack™ Oxygen Scavenger Resin Blends are provided with Certificates of Analysis included with each shipment.

## **WARRANTY**

Constar warrants only that its product will meet those specifications designated as such herein. All information supplied by Constar is considered accurate but is furnished upon the express condition that the customer shall make its own assessment to determine the product's suitability for a particular purpose. Constar makes no other warranty, either express or implied, regarding such information, the data upon which the same is based, or the results to be obtained from the use thereof; that any products shall be merchantable or fit for any particular purpose; or that the use of such information or product will not infringe any patent.

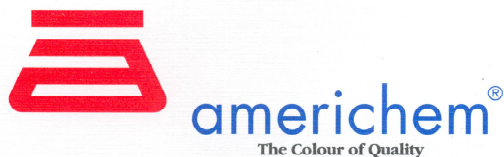
### **Americhem Europe Limited**

Head/Registered Office: Cawdor Street, Eccles, Manchester M30 0QF, UK  
Telephone: +44 (0)161 789 7832 Fax: +44 (0)161 787 7832

Luxembourg Office: 20 rue Eugène Ruppert, L-2453 Luxembourg  
Telephone: +352 26 49 36 65 Fax: +352 26 49 33 34

[www.americhem.com](http://www.americhem.com)

Registered Number: 1009410 England.



## **CONTACT INFORMATION**

For additional information, pricing, and samples contact:

Americhem Europe Ltd.  
Cawdor Street  
Eccles  
Manchester  
M30 0QF  
UK  
Phone: +44 (0) 161 789 7832



Constar, Inc.  
One Crown Way  
Philadelphia, PA 19154-4599  
Main Phone: (215) 552-3700

## **PATENTS**

MonOxbar™ Single Sack Oxygen Scavenger Material is manufactured under one or more of the following patents:

US 5,021,515	US 5,159,005	WO 2066063032
US 5,639,815	US 5,034,252	WO 2006138636
US 5,955,527	CA 1,335,912	
US 5,049,624	CA 1,324,329	
United Kingdom	2207439	
Denmark	PR173352	
Norway	300243	
Finland	101276	
Ireland	60650	

## **TESTING**

Some oxygen scavenging results were generated using the M-RULE® model, which accurately predicts the performance of Constar's OxBar® and MonOxbar® scavengers over a wide range of package types and environments. For more information about the M-RULE model, log onto [www.m-rule.com](http://www.m-rule.com).

### **Americhem Europe Limited**

Head/Registered Office: Cawdor Street, Eccles, Manchester M30 0QF, UK  
Telephone: +44 (0)161 789 7832 Fax: +44 (0)161 787 7832

Luxembourg Office: 20 rue Eugène Ruppert, L-2453 Luxembourg  
Telephone: +352 26 49 36 65 Fax: +352 26 49 33 34

[www.americhem.com](http://www.americhem.com)

Registered Number: 1009410 England.

Revision 25 September 2007