



**Investing in
bio-based materials
and manufacturing**



**ONTARIO
BIOAUTO COUNCIL**

Growing markets for soy polyols

With rising prices and concerns about long term availability of fossil fuels, many industries are looking to replace petrochemical plastics with bio-based, renewable alternatives - opening up new markets for soy polyols.

Markets for soy-based plastics or soy polyols include polyurethane foams, films, molded parts and plastic composites as well as uses in the thermoplastics industry. Packaging is another significant market opportunity for soy polyols.

At present, polyurethane foams are a major application for soy polyols. Polyurethane foam is made from a reaction with a polyol and an isocyanate. Polyurethane foam production in Canada and related polyols consumption has grown at an average annual rate of 3% over the last 20 years.¹ The total 2006 Canadian market for polyols has reached an estimated 113,000 tonnes, valued at

approximately \$315 million.² If soy-based polyols are able to capture 25% of the market by 2015, demand in Canada would be approximately 36,000 tonnes per year.

	Polyether Polyols	Polyester Polyols	Total Polyols
Slabstock (bedding, furniture, carpet underlay, etc.)	38	0	38
Molded foam products (auto seating, trims, etc.)	35	1	36
Rigid products, spray	20	1	21
Laminated board insulation	0	9	9
All other applications	8	1	9
Total	101	12	113

Table 1: Estimated Polyols Consumption in Canada, 2006 (kilotonnes)

Source: Cheminfo Services Inc. Estimated based on industry input. Rounded. Numbers shown as zero may be between 0 and 0.5 kilotonnes.

¹ Based on 1985 Cheminfo Services data and the results of Cheminfo study conducted for Ontario BioAuto Council in 2007.

² This is total Canadian market value as estimated by industry sources. It includes value of imports, resell mark-ups and sales of domestic production.

Polyurethane foam products comprise the great majority of the demand for polyols. Polyurethane coatings, adhesives, sealants, and cast elastomer products are some of the other identified applications for polyols in Canada. Polyols can also be used in specialty chemicals production.

Soy-based polyols have been incorporated into car parts and are now being used in Ontario. Polyurethane foams are the primary component of vehicle seat cushions, seat backs, arm and head rests, and overhead systems. All of these can be made with soy-derived material without compromising the quality or durability of the foam. The potential of the automotive industry – the largest sector of Ontario’s economy – represents a significant growth opportunity for Ontario soybean producers.

Nearly half of the Canadian polyol customers or polyurethane processing establishments are located in Ontario. However, it is estimated that Ontario accounts for nearly two thirds of total Canadian market demand for polyols. Ontario is home to large molded flexible polyurethane product manufacturers, a good portion of which are used in automotive applications. This would include production of automobile seats, headrests, padding, and other auto applications. Ontario is also home to large slabstock polyurethane foam producers, which serve nearby furniture, bedding and carpet underlay manufacturers.

The global plastics market is a 200 million ton market which has an annual growth rate of 5 per cent. With this existing market, soy polyols can start to gain a larger market share by establishing themselves as a main ingredient of a renewable-plastics industry – one that is eco-friendly and in some applications compostable and biodegradable.

Studies have shown that each pound of soy polyol produced saves approximately 5.6 pounds of CO₂ from being released into the atmosphere.

For more information on bioplastics and soy polyols visit:

<http://bioautocouncil.com>
<http://biobasics.gc.ca/english>
<http://www.ibaw.org>

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