Final Program

September 24-26, 2012
Omni Hotel, Atlanta, Georgia
Schedule of Events

**All events will be held at the Omni and require a badge for admission.**

Onsite Registration
Outside of Grand Ballroom, Level 4
• Sunday, September 23, 2012 – 8:30 AM - 6:00 PM
• Monday, September 24, 2012 – 8:00 AM - 6:00 PM
• Tuesday, September 25, 2012 – 8:30 AM - 5:00 PM
• Wednesday, September 26, 2012 – 7:30 - 10:00 AM

Opening Session
International Ballroom, Level 2
• Monday, September 24, 2012 – 9:30 - 11:00 AM

Industry Reception
Atrium Terrace, Atrium Level, South Tower
• Monday, September 24, 2012 – 6:00 - 7:30 PM

Poster Session
Grand Ballroom D-E, Level 4
• Monday, September 24, 2012 – 11:00 AM - 5:00 PM
• Tuesday, September 25, 2012 – 9:00 AM – 5:00 PM
• Wednesday, September 26, 2012 – 8:00 - 10:30 AM

Table Top Exhibits
Grand Ballroom D-E, Level 4
• Monday, September 24, 2012 – 11:00 AM - 5:00 PM
• Tuesday, September 25, 2012 – 9:00 AM – 5:00 PM
• Wednesday, September 26, 2012 – 8:00 - 10:30 AM

Technical Sessions
Level 2 and 4 Meeting Rooms
• Monday, September 24, 2012 – 2:00 - 5:00 PM
• Tuesday, September 25, 2012 – 9:00 AM - 12:00 PM
2:00 - 5:00 PM
• Wednesday, September 26, 2012 – 8:00 - 11:00 AM

Closing Luncheon/Awards Ceremony
International Ballroom, Level 2
• Wednesday, September 26, 2012 – 11:30 AM

Professional Development Program (PDP)
Level 1 Meeting Rooms
• Sunday, September 23, 2012 – 9:00 AM - 4:30 PM
  1:00 - 5:00 PM
• Monday, September 24, 2012 – 9:00 AM - 4:30 PM
  1:00 - 5:00 PM
• Tuesday, September 25, 2012 – 9:00 AM - 4:30 PM

Refreshment Breaks
Grand Ballroom D-E, Level 4
• Monday, September 24, 2012 – 11:00 AM - 5:00 PM
• Tuesday, September 25, 2012 – 9:00 AM - 5:00 PM
• Wednesday, September 26, 2012 – 8:00 - 10:30 AM

Press Room
Juniper, Level 2
• Sunday, September 23, 2012 – 12:00 - 6:00 PM
• Monday, September 24, 2012 – 8:00 AM - 6:00 PM
• Tuesday, September 25, 2012 – 8:30 AM - 5:00 PM
• Wednesday, September 26, 2012 – 7:30 - 10:00 AM
# Table of Contents

**Schedule of Events**  
Inside Front Cover

**Polyurethane Innovation Award**  
6

**Professional Development Program**  
7

**Industry Reception**  
8

**Opening Session**  
10

**Closing Session/Awards Ceremony**  
11

**Technical Sessions**

- Adhesives and Elastomers  
16

- Appliances/Energy Critical Foams  
12

- Automotive  
17

- Chemistry & Fundamentals  
23

- Construction 1: Advancing the Science of PUR/PIR Construction Foam  
18

- Construction 2: Advancing the Science of SPF for the Construction Industry  
24

- Elastomers and Footwear  
20

- Environment, Health & Safety  
13

- Flame Retardants and Combustibility  
14

- Flexible Foams  
15

- Processing Innovations  
21

- Regulatory Issues Panel  
22

- Renewable Content Polyols  
25

- Sustainability: Polyurethanes and the Future  
22

- Worker Health & Safety  
19

**Table Top Exhibitors**  
26

**Poster Session**  
28

**Member Companies**  
29

**Committees, Organizers, Moderators, Vice-Moderators**  
30

**Officers, Conference Management, Public Relations**  
32

**Sponsor Advertisements**  
33

**Future Conferences**  
Inside Back Cover
LEGAL NOTICE GENERAL

This conference and materials are intended to provide producers, users, and applicators of polyurethanes with general information regarding new technical innovations and applications for these important products, as well as technical aspects of safe handling, storage, and production. This conference and materials are not intended to serve as a substitute for in-depth training or specific handling, storage, or production of polyurethanes, nor are they designed or intended to create legal rights or obligations. This conference and materials are not intended to be a “how-to” program or to “recommend” any particular information, conclusion, opinion, product, service, practice, procedure, equipment design, or supplier, but rather are intended to provide a forum for appropriately moderated information exchange and discussion.

Neither the American Chemistry Council, the Center for the Polyurethanes Industry, member companies, nor presenters endorse any information, conclusion, product, service, practice, procedure, equipment design, or supplier described in this conference or contained in these materials.

Presentations made at this conference, and materials published for and from this conference, contain the views of the specific contributors and presenters, and such presentations do not represent the views of the American Chemistry Council or the Center for the Polyurethanes Industry. We assume no responsibility for the accuracy of the information presented at the conference or contained in the materials. Neither the American Chemistry Council, the Center for the Polyurethanes Industry, member companies, nor presenters makes any warranty or representation, either express or implied, with respect to the accuracy of completeness of the information contained in the conference and materials; nor do any of these entities assume any liability or responsibility for any use or misuse, or the results of such use or misuse, of any information, conclusion, opinion, product, service, practice, procedure, equipment design, or supplier described or discussed at this conference or contained in these materials.

NO WARRANTIES ARE GIVEN; ALL IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ARE EXPRESSLY EXCLUDED.

Neither the American Chemistry Council, the Center for the Polyurethanes Industry, member companies, nor presenters shall be liable for any direct or indirect damages arising out of the use of any materials or information from this conference.

All persons involved in handling, storage, production, or application of polyurethanes have an independent obligation to ascertain that their actions are in compliance with current federal, state, and local laws and regulations, and should consult with legal counsel concerning such matters. Information presented in this conference and materials is necessarily general in nature. Note that individual companies may vary their approach with respect to particular practices based on specific factual circumstances, the practicality and effectiveness of particular actions, and economic and technological feasibility.
The American Chemistry Council and its member companies, as well as the Center for the Polyurethanes Industry and its member companies, are committed to adhering strictly to United States antitrust, copyright, trademark, securities and other federal statutes, as well as state common laws covering libel, slander, defamation, false advertising, invasions of privacy and violations of the rights of publicity.

For these reasons, we have included the American Chemistry Council’s Antitrust Checklist for American Chemistry Council Meetings in this manual as guidance for all conference sessions and workshops. In addition, we provide the following supplemental guidelines for all conference-hosted discussions of “incident” and “information” exchanges, which, when properly conducted, can provide conference participants with important information regarding the safety and safe handling of particular products:

1. Arrange for the American Chemistry Council’s legal counsel to conduct an antitrust briefing prior to any incident or information exchange, and to attend the incident and/or information exchange.
2. Limit incident exchanges to factual reports which describe the incident and any lessons learned, without making recommendations or drawing collective conclusions; limit information exchanges to factual reports which describe the presenter’s experience with the topic, without specifically identifying or advocating any particular product, process
3. Avoid sweeping conclusions. Allow conference participants to draw their own conclusions; consensus is not the goal.
4. Avoid discussions and circumstances that could collectively imply an endorsement or lead to an inadvertent boycott of any product or service. Accordingly, all group discussions of and group presentations regarding particular products should be factual in nature and should be limited to technical specifications, testing or research results, and technical applications of and for products.
5. Consult the Antitrust Checklist for American Chemistry Council Meetings for more specific guidance.

COPYRIGHT

All conference materials are protected by copyright. Copies of these materials may not be reproduced or distributed in any way without express written permission of the American Chemistry Council. To request permission, please make a written (email or letter) inquiry to:

Center for the Polyurethanes Industry
700 2nd Street NE, Washington, DC 20002, U.S.A.

© American Chemistry Council 2012
ANTITRUST CHECKLIST

ANTITRUST CHECKLIST FOR AMERICAN CHEMISTRY COUNCIL MEETINGS

This antitrust checklist is for use by American Chemistry Council staff and member representatives in the conduct of American Chemistry Council-sponsored meetings. Prohibited discussion topics apply equally to social gatherings incidental to American Chemistry Council-sponsored meetings. The Checklist is not exhaustive and does not address antitrust issues relating to activities other than American Chemistry Council meetings. Participants in American Chemistry Council meetings also should be thoroughly familiar with: (1) “Antitrust Guide for American Chemistry Council Committee Members”; and (2) “General Principles Applicable to the Structure and Operations of Committees.” Both of these documents may be found in the American Chemistry Council Directory.

**DO**

Do ensure strict performance in areas of:

**OVERSIGHT/SUPERVISION:**
- have an American Chemistry Council staff representative at each American Chemistry Council-sponsored meeting (unless an exception has been authorized by the appropriate American Chemistry Council vice president);
- consult with an attorney from Legal Shared Services on all antitrust questions relating to American Chemistry Council-sponsored meetings;
- limit meeting discussions to agenda topics (unless additional topics have been approved by the appropriate American Chemistry Council staff representative); and
- provide each member company representative and American Chemistry Council staff representative attending an American Chemistry Council-sponsored meeting with a copy of this checklist, and have a copy available for reference at all American Chemistry Council-sponsored meetings.

**RECORDKEEPING:**
- have an agenda and minutes which accurately reflect the matters which occur;
- provide agendas and minutes to Legal Shared Services for review and approval in advance of distribution; and
- fully describe the purposes and authorities of all task groups, work groups, ad hoc or other standing committee subgroups in the minutes of the appropriate parent committee.

**VIGILANCE:**
- protest against any discussion or meeting activities, which appear to violate this checklist; dissociate yourself from any such discussion or activities and leave any meeting in which they continue.
DON’T

Don’t, in fact or appearance, discuss or exchange information on:

PRICES, INCLUDING:
• individual company prices, price changes, price differentials, markups, discounts, allowances, credit terms, etc. • individual company data on costs, production, capacity, inventories, sales, etc.; and industry pricing policies, price levels, price changes, differentials, etc.

PRODUCTION, INCLUDING:
• plans of individual companies concerning the design, production, distribution or marketing of particular products, including proposed territories or customers; and changes in industry production, capacity or inventories.

TRANSPORTATION RATES:
• rates or rate policies for individual shipments, including basing point systems, zone prices, freight equalization, etc.

MARKET PROCEDURES, INCLUDING:
• company bids on contracts for particular products; company procedures for responding to bid invitations; and matters relating to actual or potential individual suppliers or customers that might have the effect of excluding them from any market or influencing the business conduct of firms toward them.
Cast your vote for the 2012 Polyurethane Innovation Award Winner!

The Center for the Polyurethanes Industry (CPI) is proud of our industry’s continued leadership in innovative solutions and advances in technology. The Polyurethane Innovation Award aims to recognize the role that innovation plays in the polyurethane industry by acknowledging the efforts and foresight of companies and/or individuals whose visions and perseverance bring new products and technologies to the marketplace.

The 2012 finalists will showcase their innovative solutions and advances in technology during a short presentation during the Opening Session on Monday morning, September 24th. Conference attendees will have the opportunity to vote on who they feel represents the most significant innovation.

An award will be presented for the most innovative application in the polyurethanes industry. Entries may pertain to any of the following areas:

- Polyurethane Chemicals
- Processing Equipment
- Finished Products
- Innovative Initiatives
- Training/Education Programs

Ballots will be available for you to cast your vote! Be sure you return your completed ballot to an ACC staff member or drop your ballot in the voting box located outside the Opening Session ballroom.

Here are the finalists:

Boral Composites, Inc. for “TruExterior™ Trim”

Huntsman International LLC for “VITROX® Composite Resins”

Reverdia for “Biosuccinium™”

The 2012 Innovation Award Winner will be announced on Wednesday morning, September 26th during the Closing Session Luncheon.
PROFESSIONAL DEVELOPMENT PROGRAM

Now in its ninth year, the Polyurethane Professional Development Program (PDP) provides education and training for the global polyurethanes industry. Participants choose from a variety of seminars that run concurrently with the Polyurethanes 2012 Technical Conference. Participants must register for each seminar of interest to receive the training materials and admission to the Polyurethanes 2012 Technical Conference.

Sunday, September 23, 2012

9:00 am - 4:30 pm
Dogwood A, Level 1
PU 101: Introduction to Polyurethane Chemistry
Instructor: Brian Fogg, Brian Fogg Polyurethanes Consulting

Cottonwood A-B, Level 1
PU 104A: Polyurethane Adhesives & Sealants
Instructor: Jim O’Connor, SynUthane International, Inc.

1:00 – 5:00 pm
Dogwood B, Level 1
PU 204: Physical Testing of Polyurethane Foams
Instructor: Roy Pask, BASF Corporation

Monday, September 24, 2012

9:00 am - 4:30 pm
Dogwood B, Level 1
PU 104B: Polyurethane Coatings & Elastomers
Instructor: Jim O’Connor, SynUthane International, Inc.

Cottonwood A-B, Level 1
PU 105: Polyurethane Processing Equipment
Instructors: Christian Decker, DESMA
Lutz Heidrich, Hennecke
Richard Werner, Cannon USA

1:00 – 5:00 pm
Dogwood A, Level 1
Instructors: David Mullen, Rubicon, LLC
Randy Myrabo, BASF Corporation
Joe Otruba, Bayer MaterialScience, LLC

Tuesday, September 25, 2012

9:00 am - 4:30 pm
Cottonwood A-B, Level 1
PU 102: Introduction to Polyurethane Technology
Instructor: Paul Farkas, Consultant

Dogwood B, Level 1
PU 103: Polyurethane Markets and Applications
Instructor: Brian Fogg, Brian Fogg Polyurethanes Consulting
NETWORKING OPPORTUNITIES

Polyurethanes 2012 Technical Conference offers a multitude of networking opportunities to meet your peers, professional associates and industry leaders. This year’s event is sure to help you maximize your conference experience.

Industry Reception

The Industry Reception, a premiere networking opportunity, has become a much-anticipated event. The reception is an ideal place to network with peers and build new relationships. Hors d’oeuvres and beverages will be served.

Please Note: All attendees MUST be registered to attend the Industry Reception. NO exceptions will be made. Badges must be worn at all times while attending Reception.

Monday, September 24, 2012

6:00 - 7:30 PM
Atrium Terrace, Atrium Level South Tower

The Industry Reception is sponsored by:

- BASF
- Bayer MaterialScience
- Evonik Industries
- Huntsman
- OXID
- Stepan
POSTER SESSION

Grand Ballroom D-E, Level 4

Join your colleagues from around the globe; make contacts and exchange ideas and thoughts as presenters address new, cutting-edge technologies in market and product areas.

See page 28 for a list of posters

TABLE TOP EXHIBITION

Grand Ballroom D-E, Level 4

Monday, September 24: 11:00 AM – 5:00 PM
Tuesday, September 25: 9:00 AM – 5:00 PM
Wednesday, September 26: 8:00 – 10:30 AM

The Polyurethanes 2012 Table Top Exhibition is a perfect opportunity to peruse a myriad of products and services offered by companies and industry professionals from a wide range of disciplines.

See page 26 for a list of exhibiting companies.

Charge Up – Get Connected

Grand Ballroom D-E, Level 4

Complimentary Wi-Fi and Cell Phone charging available in the Table Top Exhibition Hall.

Cell Phone Charging Stations
Sponsored by

BiCH
A Cargill Innovation

Refreshment Breaks

Grand Ballroom D-E, Level 4

Complimentary refreshment service is provided during the conference in the Table Top Exhibit Hall.

Refreshment Breaks sponsored by

EVONIK
INDUSTRIES
Opening Session:
Monday, September 24, 2012
International Ballroom E-F, Level 2
Sponsored by

9:30 AM Welcome
Lee Salamone
Senior Director
Center for the Polyurethanes Industry

9:35 AM Conference Kick-off
Amanda Pugh
Chem-Trend
2012 CPI Conference Committee Chair

9:45 AM CPI Chairman’s Remarks
Steven Snead-Smith
Evonik Goldschmidt Corporation
CPI Steering Committee Chair

10:00 AM Presentation of Innovation Award Finalists

10:15 AM Keynote Presentation
Cal Dooley
CEO & President
American Chemistry Council

Cal Dooley, president and CEO of the American Chemistry Council, will help celebrate the 75th anniversary of the polyurethanes industry by examining the discoveries and events that led the industry to its impressive development today. He will discuss the opportunities and challenges facing the industry moving forward and what actions are being taken now on issues such as chemical regulation reform and energy policy.
Closing Session/Awards Luncheon:
Wednesday, September 26, 2012
International Ballroom E-F, Level 2

11:30 AM Luncheon
11:45 AM Conference Highlights and Presentation of Awards
Amanda Pugh
Chem-Trend
2012 CPI Conference Committee Chair

12:15 PM 2013 Polyurethanes Technical Conference
Anthony Lanchak
Momentive Performance Materials
2012 Conference Committee Vice Chair

1:00 PM Conference Adjourns

Thank you to the following 2012 Polyurethanes Technical Conference Sponsors

Conference Lanyards
Sponsored by

Conference Hotel Keycards
Sponsored by

Conference Proceedings Flash Drive
Sponsored by
The Appliance/Energy Critical Foam session consists of two areas of considerable interest to the rigid polyurethane foam industry: the development of low GWP blowing agents and the optimization of the use of rigid polyurethane foam in an energy critical application, household refrigerators and freezers. There will be updates on the development of several new blowing agents designed to lower GWP HFCs. There will also be a discussion of the potential impacts of new blowing agents in various applications, like refrigeration.

2:00 PM  Moderator Opening Remarks

2:05 PM  Solstice™ Liquid Blowing Agent: Functional Performance and Development Status
James Bowman, Honeywell
David Williams, Honeywell

2:30 PM  AFA-L1, a Low GWP Blowing Agent for the Appliance Industry
Joseph Costa, Arkema Inc.
Ben Chen, Arkema Inc.
Laurent Abbas, Arkema Inc.
Sri Seshadri, Arkema Inc.
Michael Krupa, BASF Corporation
Fernand Saad, BASF Corporation
Kyle Scarlett, BASF Corporation
Yordani Sinaga, Whirlpool Corporation
Brian Grimm, Whirlpool Corporation

3:00 PM  Blowing Agent Blends for Refrigeration - the Next Paradigm
John Murphy, Foam Supplies, Inc.

3:30 PM  BREAK

4:00 PM  Effects of Processing Variables on a Polyurethane Foam System Blown with Cyclopentane
Steve Aprahamian, Bayer MaterialScience LLC

4:30 PM  Assessment of Formacel® 1100 (FEA-1100) Blowing Agent in Rigid Polyurethane Insulating Foams for Domestic Appliance
Melissa Rose, Dow
Vanni Parenti, Dow Italia S.r.l.
Rossella Riccio, Dow Italia S.r.l.
Paulo Altoe, Dow Brasil Sudeste Industrial
Monday, September 24, 2012

2:00 - 5:00 PM
International Ballroom A, Level 2

Environment, Health & Safety

Session Organizers: William Robert, BASF Corporation
Cynthia Graham, Huntsman International, LLC

Moderator: William Robert, BASF Corporation

Vice Moderator: Cynthia Graham, Huntsman International, LLC

The EH&S session will highlight key research by U.S. EPA, CPI and its members on considerations when applying spray polyurethane foam (SPF). The U.S. EPA will present best practices to prevent worker and consumer exposures to uncured chemicals. The next three papers address engineering controls used to help reduce exposure for homeowners, a proposed methodology to establish guidelines for perimeter protection around exterior applications of spray foam, and an update on CPI’s Ventilation Project evaluating ventilation rates and their impact on the concentration of SPF materials during application. The session concludes with a status update on the development of ASTM standard practices and test methods to measure potential emissions from SPF insulation.

2:00 PM  Moderator Opening Remarks

2:05 PM  Promoting Best Practices and Voluntary & Regulatory Risk Management Approaches for Diisocyanates in Polyurethane Products
Carol Hetfield, U.S. Environmental Protection Agency
Katherine Sleasman, U.S. Environmental Protection Agency

2:30 PM  Ventilation and Re-Occupancy of a Residential Home Sprayed with High Pressure Polyurethane Foam
William Robert, BASF Corporation
James Anderson, BASF Corporation
Richard Wood, Air Products and Chemicals, Inc.
Mary Bogdan, Honeywell

3:00 PM  A Proposed Methodology for Establishing a Safe Work Zone Around an SPF Application to Exterior Walls of a Commercial Structure
Scott Ecoeff, Bayer MaterialScience, LLC
Jim Lambach, Bayer MaterialScience, LLC

3:30 PM  BREAK

4:00 PM  CPI Ventilation Project - Phase 1 and Phase 2 Update
Rick Wood, Air Products and Chemicals, Inc

4:30 PM  Research Report for Measuring Emissions from Spray Polyurethane Foam (SPF) Insulation
John Sebroski, Bayer MaterialScience, LLC
Monday, September 24, 2012

2:00 - 5:00 PM
Grand Ballroom A, Level 4

Flame Retardants & Combustibility

Session Organizer: Mike Nagridge, ICL-IP America Inc.
Moderator: Mike Nagridge, ICL-IP America Inc.
Vice Moderator: Mitesh Shah, BASF Corporation

This session will focus on new developments in flame retardant properties of polyurethane foam, followed by an update on industry issues. In our first paper, we will examine the development of an alkoxylated glycerol phosphate polyol and its flammability performance in a coating for polyurethane applications. Test results including thermogravimetric analysis, loss on ignition, and cone calorimeter will be presented. The next paper will cover new developmental products in flame retardant technologies for flexible foam applications, with a focus on the activities to create, evaluate, and commercialize a new product to meet today’s challenges in the flexible foam industry. The session will conclude with an examination of California’s current residential furniture flammability standard, TB 117, an update on industry issues, and a study on home fire casualties.

2:00 PM Moderator Opening Remarks

2:05 PM Development of Polyurethanes with Improved Flame Retardant Properties Based on Alkoxylated Glycerol Phosphate Polyols

Maria Velencoso, ITQUIMA
Maria Ramos, ITQUIMA
Juan Rodriguez, ITQUIMA
Rene Klein, Huntsman International LLC
Antonio De Lucas, ITQUIMA

2:30 PM New FR Developments for the Flexible Foam Market

Michael Nagridge, ICL-IP America Inc.
Manny Pinzoni, ICL-IP America Inc.
Andrew Piotrowski, ICL-IP America Inc.
Jeffrey Stowell, ICL-IP America Inc.
Joop Wuestenenk, ICL-IP Europe BV
Jens Leopold, ICL-IP Bitterfeld GmbH

3:00 PM The Utility of CAL TB 117, Does the Regulation Add Value?

Matthew Blais, Southwest Research Institute

3:30 Break

4:00 PM Updates from ACC’s North American Flame Retardant Alliance

Jackson Morrill, American Chemistry Council

4:30 PM A Comparative Study Assessing Factors that Influence Home Fire Casualties and Fatalities Using State Fire Incident Data

Ofodike Ezekoye, The University of Texas at Austin
The Flexible Foam session begins with an analysis of possible flexible foam odors, including causes and solutions. Two novel technologies will be presented for production of all MDI flexible viscoelastic foam: one covers viscoelastic for molded applications, the other describes viscoelastic technology for slabstock production meeting CertiPUR-US requirements. Case studies of an anti-scorch stabilizer package, how it helps prevent PU degradation and can contribute to conformance to industry standards will also be presented. The session will conclude with the description of a novel surfactant for use with polyester slabstock.

2:00 PM  Moderator Opening Remarks

2:05 PM New Formulation Technology for the Production of all-MDI Molded Viscoelastic Foams
Elisa Corinti, Dow Formulated Systems
Andrea Benvenuti, Dow Formulated Systems
Alessio Sabadini, Dow Formulated Systems
David Honkomp, Dow Formulated Systems

2:30 PM CertiPUR-US® Compliant MDI Flexible Polyurethane Foams
Yun-Shan Liu, Huntsman International LLC
Katherine Piasecki, Huntsman International LLC
Glyn Davies, Huntsman International LLC

3:00 PM Stabilization of Polyol for PU Flex Foams: Anti-Scorch Packages Performance and Case Studies
Cinzia Tartarini, BASF Schweiz AG
Kristin Poljan, BASF Corporation

3:30 PM BREAK

4:00 PM New Additives for Polyester and Flame Lamination Foam
Gabriel Kiss, Momentive Performance Materials GmbH
Yilong Luo, Momentive Performance Materials
Alberto Melle, Momentive Performance Materials (Suisse) Sarl
Greg Pickrell, Momentive Performance Materials

4:30 PM Optimized Silicone Surfactant for the Manufacture of Flame Retarded Foams
Annegret Terheiden, Evonik Industries AG
Roland Hubel, Evonik Industries AG
**MORNING TECHNICAL SESSIONS**

**Tuesday, September 25, 2012**

9:00 - 10:30 AM  
Grand Ballroom C, Level 4

**Adhesives and Elastomers**

**Session Organizers:** Juan Carlos Medina, Dow  
Daniel Rosenvasser, Huntsman International, LLC

**Moderator:** Daniel Rosenvasser, Huntsman International, LLC

**Vice Moderator:** Eric Stebel, Huntsman International, LLC

This session will explore novel approaches to thermoplastic urethane formulations. Included in the program are TPU alloys with improved E modulus for demanding hose and tube applications; TPUs made from the biobased materials succinic acid and 1,3-propane diol; and TPUs made from aliphatic isocyanates for the improvement of elastomer stability in the presence of light and color fastness. The session will also cover the use of water as a chain extender for liquid PU binders of particulate material.

**9:00 AM  Moderator Opening Remarks**

**9:05 AM  Process for Extending Moisture Cure Polyurethane Binders with Water**

Robert Cunningham, Dash Multi-Corp  
John Lockard, Dash Multi-Corp  
Jeff Stanley, Dash Multi-Corp

**9:30 AM  Benefits of Aliphatic Diisocyanates (ADI) and their Derivatives in Thermoplastic Materials**

Corey King, Evonik Degussa Corporation  
Samy Saad, Evonik Degussa Corporation  
Rainer Lomoelder, Evonik Industries AG  
Dirk Hoppe, Evonik Industries AG  
Christoph Nacke, Evonik Industries AG  
Emmanouil Spyrou, Evonik Industries AG

**10:00 AM  Evaluating the Properties and Performance of Susterra® 1,3 Propanediol and Biosuccinium™ Sustainable Succinic Acid in TPU Applications**

Robert Miller, DuPont, Tate & Lyle Bio Products  
Richard Janssen, Reverdia V.O.F.  
Lawrence Theunissen, Reverdia V.O.F.
Tuesday, September 25, 2012

9:00 - 11:30 AM
Grand Ballroom B, Level 4

Automotive

Sponsored by

**Session Organizers:** Rich Rossio, Chem-Trend LC  
Allan James, Dow

**Moderator:** Hamdy Khalil, Woodbridge Foam Corporation  
**Vice moderator:** Roy Pask, BASF Corporation

This session highlights innovations in flexible foam used in automotive applications. Topics include an evaluation of H-point during extended driving conditions, a new silicone surfactant designed to meet stringent emissions specifications, and the introduction of an amine catalyst to accelerate the cure rate of molded foam without negatively impacting foam properties.

**9:00 AM  Moderator Opening Remarks**

**9:05 AM  Dynamic H-Point Loss of MDI and TDI Automotive Seating Foams and a Method to Predict It**
John Olari, Huntsman International LLC  
Asad Ali, Lear Corporation

**9:30 AM  Reducing Silicone Surfactant Emissions In Automotive Flexible Molded Foam**
Courtney Thurau, Air Products and Chemicals, Inc.  
Allen Arnold, Air Products and Chemicals, Inc.  
Torsten Panitzsch, Air Products, GmbH

**10:00 AM  Development of Novel Amine Catalysts for Improving Cure of Flexible Foams**
Haruyasu Kitaguchi, TOSOH Corporation  
Katsumi Tokumoto, TOSOH Corporation  
Yoshihiro Takahashi, TOSOH Corporation  
Hiroyuki Kiso, TOSOH Corporation  
Jeff Tucker, TOSOH Specialty Chemicals USA, Inc.

**10:30 AM  BREAK**

**11:00 AM  The Use of Urethane in the Construction of Automotive Air and Fluid Filters**
Peter Hyde-Smith, Bayer Material Science, LLC  
Bradley Pederson, Bayer Material Science, LLC  
Ned Krause, Bayer Material Science, LLC  
Ulrich Holeschovsky, Bayer Material Science, LLC

[americanchemistry.com/polyurethane](http://americanchemistry.com/polyurethane)
Tuesday, September 25, 2012
9:00 AM - 12:00 PM
Grand Ballroom A, Level 4

Construction 1: Advancing the Science of PUR/PIR Construction Foam

Sponsored by

**Session Organizers:** James Tobias, Air Products and Chemicals, Inc.
Ed Ball, Bayer MaterialScience LLC
Monica Karamagi, Huntsman International, LLC
Ken Willoughby, Momentive Performance Materials
Allison Yeske, Momentive Performance Materials

**Moderator:** George Pavlovich, Bayer MaterialScience LLC

**Vice Moderator:** Bill Nicola, Bayer MaterialScience LLC

LEED, new model building codes requiring more building energy efficiency, and proposals to regulate greenhouse gas emissions make consideration of environmental impact and maximizing energy efficiency very important in developing the next generation of PUR and PIR insulating foams for construction applications. Attendees will learn the many ways that the versatility of polyurethane chemistry can help the construction industry meet these challenges. Presentation topics include the application of new low GWP blowing agents, additives for construction insulation, and the effect of building code evolution on building envelope design.

**9:00 AM Moderator Opening Remarks**

**9:05 AM Continued Evaluation of Blowing Agent Solutions in Pour-in-place Panel Applications With Less Environmental Impact**

Jim Y.K., Ling, Honeywell
Ryan S.L. Qin, Honeywell Integrated Technology (China) Ltd.
Ben B. Lu, Honeywell Integrated Technology (China) Ltd.
Robin R.W. Pan, Honeywell Integrated Technology (China) Ltd.

**9:30 AM The Evolution of Building Codes and Their Influence on the Future of Building Envelope Design**

Michael Fischer, Kellen Company
Jerry Phelan, Bayer MaterialScience, LLC

**10:00 AM Understanding the Relationship Between Surfactants and Aged Insulation Value in PIR Foam**

Christian Eilbracht, Evonik Goldschmidt Corporation
Carsten Schiller, Evonik Goldschmidt Corporation
Torsten Metz, Evonik Goldschmidt Corporation
Robert Tauchen, Evonik Goldschmidt Corporation

**10:30 AM BREAK**

**11:00 AM Formacel® 1100 (FEA-1100) - A Zero ODP and Low GWP Foam Expansion Agent**

Gary Loh, DuPont
Joseph Creazzo, DuPont
Mark Robin, DuPont
Saadat Ata, DuPont

**11:30 AM Extra-Large Plant for Just-In-Time Discontinuous Production of Wall and Roof Insulated Panels**

Robert Verbruggen, Cannon Benelux
Max Taverna, Cannon Group
Tuesday, September 25, 2012

9:00 AM - 12:00 PM
International Ballroom A, Level 2

Worker Health & Safety

Session Organizer & Moderator: Heather Palfrey, Center for the Polyurethanes Industry of the American Chemistry Council

This session will highlight programs and stewardship materials addressing worker health and safety, including an update on the development of a voluntary spray foam contractor certification program, the implementation of a spray foam contractor accreditation program, changes to OSHA's Hazard Communications standard, and a panel presentation on an Isocyanates Bulk Trucking Symposium designed to facilitate communication between isocyanate manufacturers and bulk trucking transportation suppliers.

9:00 AM  Moderator Opening Remarks

9:05 AM  SPF Industry Certification, Accreditation and Training For the 21st Century
Kurt Riesenberg, Spray Polyurethane Foam Alliance
Kelly Marcavage, Spray Polyurethane Foam Alliance
Rick Duncan, Spray Polyurethane Foam Alliance
Bonnie Strickler, Puff Inc.

9:30 AM  Creation and Implementation of a Contractor Accreditation Program for Spray Polyurethane Foam
Bob Creighton, Bayer MaterialScience, LLC
Jim Lambach, Bayer MaterialScience, LLC
Martha Vandamme, Bayer MaterialScience, LLC

10:00 AM  Changes to OSHA's Hazard Communication Standard
Deana Holmes, U.S. Occupational Safety & Health Administration
Stacey McGuire, U.S. Occupational Safety & Health Administration

10:30 AM  BREAK

11:00 AM  Supply Chain Process Improvement Concept: Isocyanates Bulk Trucking Symposium

Facilitators:
Bill Wehrle, BASF Corporation
David Bazzetta, BASF Corporation/RGP

Panelists:
Jim Brown, Service Transport Company
Rick Cole, Transport Service Company
David Perry, Trimac Transportation
John Rakoczy, DistTech, Inc.
AFTERNOON TECHNICAL SESSIONS

Tuesday, September 25, 2012

2:00 - 3:30 PM
Grand Ballroom A, Level 4

Elastomers and Footwear

Sponsored by

Session Organizers: Juan Carlos Medina, Dow
Daniel Rosenvasser, Huntsman International, LLC

Moderator: Rafael Camargo, Huntsman International, LLC

Vice Moderator: Heinz Plaumann, BASF Corporation

This session will feature advances in backbones and processing of polyurethane products that target footwear applications and air and fluid filters. Presentations will address machinery to inject different gas types into liquid polyurethane streams used in the footwear industry to enhance design and reduce density, a new route to synthesize high performance renewable polyols using waste carbon dioxide in flexible footwear foams, and two-component urethane systems developed for use in endcaps and adhesives for automotive air and fluid filters with potential to simplify and improve existing processing and materials.

2:00 PM  Moderator Opening Remarks

2:05 PM  PU Lightweight Production by Using an Integrated Gasdosing System
Bjoern Dormann, DESMA GmbH
Christian Decker, DESMA GmbH

2:30 PM  Renewable Footwear Systems Based on Polyols Derived from Waste Carbon Dioxide
Jason Anderson, Novomer, Inc.
Scott Allen, Novomer, Inc.
Rafael Camargo, Huntsman International LLC
Daniel Rosenvasser, Huntsman International LLC

3:00 PM  Integration of Polyurethane in the Functional and Optical Design for Footwear
Bjoern Dormann, DESMA GmbH
Christian Decker, DESMA GmbH
Tuesday, September 25, 2012
2:00 - 4:30 PM
Grand Ballroom B, Level 4
Processing Innovations

Session Organizers: Richard Werner, Cannon USA
Barry Metzler, Graco Ohio, Inc.
John Tolley, Hennecke, Inc.

Moderator: Barry Metzler, Graco Ohio, Inc.
Vice Moderator: John Muto, Hennecke, Inc.

The Processing Innovations session will provide updates on ways to address various processing challenges. Innovative solutions include equipment suitable for continuous manufacture of large ceramic tiles, automated production techniques for the manufacture of elastomeric footwear, cogeneration heating technology to reduce energy consumption associated with the application of spray polyurethane foam, and a release-free system for foam molding that can eliminate mold release build-up, clean-up, and emissions.

2:00 PM  Moderator Opening Remarks

2:05 PM  Innovative Method for the Production of Structural Elements for the Construction Industry
Max Taverna, Cannon Group
Andrea Gozzi, System Group

2:30 PM  Automation of Production Systems for High Quality PU Eastomer Parts
Christian Decker, DESMA GmbH
Bjoern Dormann, DESMA GmbH

3:00 PM  Co-generation Technology: The Key to a More Fuel-Efficient Proportioning System
Arthur Graf, Graco Inc.

3:30 PM  BREAK

4:00 PM  Innovation for Release Agent Free Foam Molding
Lee Hodson, FRIMO Inc.
Michael Bimmerman, FRIMO Inc.

americanchemistry.com/polyurethane
Tuesday, September 25, 2012
2:00 - 5:00 PM
Grand Ballroom C, Level 4

Sustainability: Polyurethanes and the Future

Session Organizers: Ed Ball, Bayer MaterialScience LLC
Monica Karamagi, Huntsman International, LLC
Allison Yeske, Momentive Performance Materials

Moderator: Ed Ball, Bayer MaterialScience LLC

Vice Moderator: Tony Abisaleh, Huntsman International, LLC

Sustainability of products has become a mainstream topic for society. Stakeholders and ratings agencies are interested in the sustainability of products that are a part of everyday life. This session looks at the sustainability of polyurethane foam products used in construction through Life Cycle Analysis (LCA) and End-of-Life management of foams.

2:00 PM  Moderator Opening Remarks

2:05 PM  Life Cycle Assessment of Spray Polyurethane Foam Insulation
George Pavlovich, Bayer MaterialScience, LLC
Shen Tian, Bayer MaterialScience, LLC
Rick Duncan, Spray Polyurethane Foam Alliance

2:30 PM  Life Cycle Analysis of Spray Foam Prepared with Solstice® Liquid Blowing Agent
Mary Bogdan, Honeywell
Xuaco Pascual, Honeywell

3:00 PM  European Experiences on the End-of-Life Management of Polyurethane and Other Foams
Paul Ashford, Caleb Management Services Limited
Hookyung Kim, Caleb Management Services Limited
Arnie Vetter, Caleb Management Services Limited

3:30 PM  BREAK

4:00 PM  Connecting Use-Phase Benefits with Whole Building Life Cycle Assessment
Jerry Phelan, Bayer MaterialScience, LLC

4:30 PM  Federal Recycling Initiative for Mattresses
Ryan Trainer, International Sleep Products Association

Regulatory Issues Panel

2:00 - 5:00 PM
International Ballroom A, Level 2

Session Organizer & Moderator: Lee Salamone, Center for the Polyurethanes Industry of the American Chemistry Council

Agency representatives and industry experts will provide updates on regulatory issues affecting the global polyurethanes industry.

REACH: Status and Outlook REACH 2012
Wolfram Frank, European Diisocyanate & Polyol Producers Association

2:00 PM  Moderator Opening Remarks

Update on EPA Chemical Action Plans for MDI and TDI
Katherine Sleasman, U.S. Environmental Protection Agency

Update on Canadian Chemicals Management Plan
Marie-Louise Geadah, Environment Canada
Session Organizer: Raymond Neff, BASF Corporation
Moderator: Heinz Plaumann, BASF Corporation
Vice Moderator: Robert Grigsby, Huntsman International, LLC

This session covers a broad range of innovations, including measurements, polyurethane ingredients and new materials. New methods for determining surface area of foams are described, followed by recent developments in anti-scorch, light and thermal stabilizers. Two polyol technologies will be introduced: the use of high primary hydroxyl polyol to produce high quality flexible foam and the neutralization of cesium catalysts in the production of polyols. The session concludes with an examination of a unique siloxane-based polyurethane material that makes it suitable for medical use.

8:00 AM  Moderator Opening Remarks

8:05 AM  Innovations in Post-Treatment Foam Stabilizers with Improved Environmental Characteristics
Istvan Lippai, Chemtura
Satoshi Nakagawa, Chemtura Japan Limited
Thomas Schmutz, Chemtura Europe GmbH

8:30 AM  Newly-developed High Performance Polyols with High Primary Hydroxyl Groups for Flexible Polyurethane Foams
Toru Miyajima, Sanyo Chemical Industries, Ltd.
Tomohisa Hirano, Sanyo Chemical Industries, Ltd.
Erika Nobukuni, Sanyo Chemical Industries, Ltd.
Kenji Nishiyama, Sanyo Chemical Industries, Ltd.

9:00 AM  Use and Recovery of Cesium as Catalyst in the Polyol Synthesis Process
Juan Francisco Rodriguez, ITQUIMA
Maria Jesus Ramos, ITQUIMA
Maria Teresa Villajos, Repsol Technological Center (CTR)
Anne Chloe Devic, Repsol Technological Center (CTR)
Antonio de Lucas, ITQUIMA

9:30 AM  BREAK

10:00 AM  Siloxane Based Polyurethanes - Morphology, Properties and Applications
Ajay Padsalgikar, AorTech Polymers and Medical Devices
Wednesday, September 26, 2012
8:00 - 9:30 AM
Grand Ballroom A, Level 4

Construction 2: Advancing the Science of SPF for the Construction Industry

Sponsored by

Session Organizers: James Tobias, Air Products and Chemicals, Inc.
Ed Ball, Bayer MaterialScience LLC
Kevin Arsenault, Graco Ohio, Inc.
Monica Karamagi, Huntsman International, LLC
Ken Willoughby, Momentive Performance Materials
Susan Norris, Momentive Performance Materials

Moderator: Jose Luna, Bayer MaterialScience LLC

Vice Moderator: James Tobias, Air Products and Chemicals, Inc.

Spray polyurethane foam insulation significantly contributes to achieving goals of raising energy efficiency. This session highlights industry advances in raw materials designed to reduce environmental impact. Presentations on the latest low-GWP blowing agents and additives that help improve SPF properties will be of interest to all involved in the spray foam enterprise.

8:00 AM  Moderator Opening Remarks

8:05 AM  Low- or Non-Emissive Amine Catalysts for Low Density, Open-Cell Spray Polyurethane Foam
Bulent Ozbas, Air Products and Chemicals, Inc.
Jean Vincent, Air Products and Chemicals, Inc.
James Tobias, Air Products and Chemicals, Inc.
Joel Rogers, Air Products and Chemicals, Inc.
Juan Burdeniuc, Air Products and Chemicals, Inc.

8:30 AM  Low GWP Spray Foam Expansion Agents: Why Performance also Matters
Todd Krieger, DuPont
Christopher Johnas, DuPont
Shaibal Roy, DuPont
Helen Walter-Terrinoni, DuPont

9:00 AM  Improved Shelf Stability of Rigid Polyurethane Premixes Using AFA-L1, a Low GWP Blowing Agent
Joseph Costa, Arkema Inc.
Ben Chen, Arkema Inc.
Laurent Abbas, Arkema Inc.
Sri Seshadri, Arkema Inc.
Wednesday, September 26, 2012

8:00 - 11:00 AM
Grand Ballroom B, Level 4

Renewable Content Polyols

Session Organizer: Todd Bates, Huntsman International, LLC
Moderator: Jack Dai, Cargill, Inc.
Vice Moderator: Todd Bates, Huntsman International, LLC

The renewable content polyol session will introduce new technologies that can be used across a wide range of applications. The session will start with a presentation on second generation natural oil polyols for flexible foam and CASE applications. The next paper will introduce a process for creating renewable polyols from waste carbon dioxide which can be used for various CASE polyurethane applications. The third paper will discuss bio-succinate polyesters for TPU applications. The last two papers will concentrate on renewable content polyols for rigid application: polyols produced from soy meal and an update on lignin-based polyols.

8:00 AM  Moderator Opening Remarks

8:05 AM  2nd Generation Honey Bee High Molecular Weight and High Functionality Natural Oil Polyols for Foam and CASE Applications
Xian Xian Du, MCPU Polymer Engineering LLC
John Miller, MCPU Polymer Engineering LLC

8:30 AM  Using Waste CO2 to Create Novel Renewable Polyols for Polyurethane Applications
Scott Allen, Novomer, Inc.
Jason Anderson, Novomer, Inc.
Christopher Simoneau, Novomer, Inc.
Jeremy Burgess, Troy Polymers
Aisa Sendijarevic, Troy Polymers
Vahid Sendijarevic, Troy Polymers

9:00 AM  Bio-Succinate Polyesters for Thermoplastic Polyurethanes Enabling Sustainable New Products with Performance Inspired by Nature
Tara Mullen, BioAmber, Inc.
Dean Webster, North Dakota State University
Mohammed Nasrullah, North Dakota State University
Neil Eidenschink, North Dakota State University

9:30 AM  BREAK

10:00 AM  Rigid Polyurethane Foams Based on Soy Meal Polyols
Siva R.K. Chalasani, Michigan State University
Senad Heric, Troy Polymers, Inc.
Pallavi Amin, Troy Polymers, Inc.
Vahid Sendijarevic, Troy Polymers, Inc.
Elodie Hablot, Michigan State University
Daniel Graiver, Michigan State University
Ramani Narayan, Michigan State University

10:30 AM  Non-food Grade Biopolyols for Rigid Biofoams
Minh-Tan Ton-That, National Research Council Canada
Tri-Dung Ngo, National Research Council Canada
Agrol® AO, Agrol Prime™, Agrol Star™, Agrol Select™ polyurethane applications. This year it’s introducing bio-material enabling sustainable products. Susterra® 1,3-propanediol is a high performance www.agrolinside.com tbarbaree@biobased.net Tausha Barbaree, 479-966-4600 1200 Stewart Place, Springdale, AR 72764 BioBased Technologies polyurethanes market. materials with high renewable content to the biobutanediol, bringing cost-effective performance BioAmber is a global leader in biosuccinic acid and www.bio-amber.com/bioamber/en/home Tara.Mullen@bio-amber.com Tara Mullen, 763-253-4480 3850 Annapolis Lane North, Suite 110 Plymouth, MN 55447 BioAmber Inc. Booth 21 BioPolymers® 12012 Stewart Place, Springdale, AR 72764 Tasha Barberare, 497-869-4600 barberare@biopolymers.net www.agrolinside.com BioBased Technologies® markets Agrol® polyols for polyurethane applications. This year it’s introducing Agrol® AO, Agrol Primer™, Agrol Star™, Agrol Select™ and Agrol Platinum™. Booth 6 Chromalloy Technologies Corp. 2620 Michigan Ave, Ashbula, OH 44040 Jamie Stevenson, 440-997-5137 x 213 jstevenson@plasticolors.com 2600 Michigan Ave., Asthabula, OH 44004 Chromatrol® Technologies, Inc. and Colortrend global colorants. Diverse technical and custom color solutions to meet complex requirements for Coatings and Thermalos Plastics markets. Booth 37 Con-Tek Machine, Inc. 3575 Hoffman Road, St. Paul, MN 55110 Ross Wluxthuy, 651-779-6058 nellowthuy@con-tek.com www.con-tek.com Designers/manufacturers of polyurethane fusing equipment since 1983. RIM stamps and foaming fixtures for automobile parts and all types of insulated panel, door & cabinet products. Booth 37 Duffin Tate & Lyle Bioproducts Company 974 Centre Road, CRP711-1140, Wilmington, DE 19805 Robert Miller, 302-999-4267 Robert.Miller@usa.dupont.com www.dupont.com/products/polyurethanes.php Sustearin®, 1,3-propenediol is a high performance replacement for 1,4-butenediol as a polyol building block or chain extender. Sustearin® is a 100% bio-material enabling sustainable products. Booth 28 EESCO (Edge Sweets Company) 2887 Three Mile Rd. NW, Grand Rapids MI 49534 USA Stephen Hoffman, 616-453-5458 ext. 213 shoffman@edge-sweets.com www.edge-sweets.com Edge Sweets, North America’s original polyurethane process and fabrication equipment manufacturer which allows us to offer solutions for the most demanding of polyurethane applications. Booth 17 EuroTech Distributors 9503 Brandwyne Road, Suite 2 Northfield, OH 44067 Jeff Gross, 330-908-3876 Office 330-963-6906 Mobile jgross@eureotch-distributors.com www.eurotech-distributors.com Distributor of foam qualification equipment using measured reaction rise profiles, curing and pressure for flexible and rigid foams. Booth 12 FRIMO Inc. 50685 Century Court, Wixom, MI 48393 Brent Gawn, 348-756-9305 Gawnsw.b@frimo.com www.frimo.com FRIMO Inc. offers tooling and equipment solutions for polyurethane applications from product development/design and manufacture to final product validation in its Tech Center. Booth 11 Hennecke Inc. and PurPlan Inc. 55 Park Drive, Lawrence, MA 01555 Lutz Heidrich, 724-271-3063 lutz.heidrich@usa.hennecke.com www.hennekeinc.com and www.purplan.com Among PU machinery and plant manufacturers, Hennecke enjoys worldwide renown as being the company with the broadest product range. PurPlan is our competent partner for all bulk and blend system needs. Booth 20 Hi-Tech Engineering, Inc. 2450 Oak Industrial Drive, Grand Rapids, MI 49505 Otto Huber, 800-968-9001 or 616-957-4030 ohuber@hitcheengineering.com www.hitcheengineering.com Hi-Tech Engineering offers a comprehensive range of unit and customized urethane process machines. Our services extend from freestanding machines to turn key project management for integrated systems. Booth 15 Honeywell 101 Columbus Road, Morristown, NJ 07962 Bryan Magnus, 973-455-5160 Bryan.Magnus@honeywell.com www.honeywell.com Honeywell Solstice™ Liquid Blowing Agent combines superior insulation performance with LGWP and cost-effective implementation. Commercially available starting in 2013. Contact Honeywell today. Booth 3 Huntsman International LLC 10003 Woodcock Forest Drive, The Woodlands, TX 77380 281-718-0000 www.huntsman.com/pu Huntsman is a global leader in providing MDI-based polyurethanes solutions across an extensive range of applications and market sectors. We create better urethanes... Together. Booth 25 IAL Consultants Ltd. CP House, 97-107 Uxbridge Road, Ealing London W5 5LT United Kingdom Chris Flanagan, +44 208 832 7780 cfanagan@brggroup.com www.ialconsultants.com IAL is a global consultancy specializing in market research and custom designed proprietary studies in the field of polyurethanes, now launching its global PU database. Booth 38 KFH Neochem Americas, Inc. 1515 E. Woodfield Rd., Suite 710, Schaumburg, IL 60173 Brian Hannah, 847-517-8800 ext. 2 Hannah@kfnether.com www.kfhneochem.com We offer unique, branched hydrophobic diols, some that are liquids with low viscosities. We also have branched acids and alcohols with low color.
Booth 31
Lonzza Micronal Control
Arch is New Part of Lonza, 2450 Olin Road
Brandenburg, KY 40108
Bob Hise, 903-379-9974
micronalcontrol@lonza.com
www.lonza.com
Lonza is a supplier of specialty polyols to the Polyurethane Industry. Products include chain extenders and curatives (HQEE) and Polypropylene glycols.

Booth 8
MCPU Polymer Engineering, LLC / Honey Bee Soy Polyols
926 East Fourth Street, Pittsburg, KS 66762
Holly Cash, 888-627-1223
hca$h@honeybee.cc
www.honeybee.cc
Honey Bee soy polyols with primary hydroxyls allow high NCO content formulating for all urethane categories. USDA BioPreferred Products. Formulate for the future.

Booth 14
Myrland Corporation
1 Pine Hill Drive, 2 Battleymarch Park, Suite 301
Quinncity, CT 06259
Joe Bauer, 617-657-5200
www.myrland.com
Myrland Corporation manufactures specialty chemicals from renewable feedstocks. We harness nature’s power to build complex molecules; building blocks for urethanes, coatings, plastics and other products.

Booth 33
PhibroChem
Glenpointe Centre East, 3rd Fl.
300 Frank W. Burr Boulevard, Suite 21
Teaneck, NJ 07666
Michael Pollock, 517-333-3747
michael.pollock@phibrochem.com
www.phibrochem.com
PhibroChem will feature products manufactured by Concentro®. This prominent European specialty chemical manufacturer supplies silicone surfactants and adhesives to the HR and rigid foam industry.

Booth 20
Piedmont Chemical Industries I, LLC
331 Burton Avenue, High Point, NC 27262
Gary Reynolds, 336-885-5131
GaryReynolds@Piedmontchemical.com
www.piedmontchemical.com
Piedmont Chemical is a diversified specialty chemical manufacturer of Polyurethane building blocks, additives, and process auxiliaries. In addition, we offer custom manufacture of Polyurethane building blocks, additives, and process auxiliaries. In addition, we offer custom manufacturing under exclusive agreement.

Booth 4
Polyurethane Process Industries
1628 Roseytown Road, Suite 7, Greensburg, PA 15601
Thomas E. Cherry, 724-757-4630, Office 724-691-0551
thorner@pu-process.com
www.pu-process.com
Sales (new and used), service, repair, consulting and U.S. distributor for the OMS Group providing turnkey solutions for foam, coatings, adhesives and sealants. Polyurethane Process Industries (OMS) Group is the world leader in turnkey solutions for foam, coatings, adhesives and sealants.

Booth 1
PU Magazine International
Am Stadion 3b, 40878 Ratingen Germany
+49 2102 9345-0
info@gupta-verlag.de
www.gupta-verlag.de
PU Magazine is published by Gupta Verlag in Germany, available in three languages. The magazine publishes technical and economic articles for the global PU industry.

Booth 26
Reaxis Inc.
841 Robinson Highway, McDonal, PA 15057
Michael Curcione
Michael.curcione@reaxis.com
www.reaxis.com
Reaxis manufactures and supplies a broad and extensive selection of inorganic, organometallic, metal and acid catalyst products that are used in formulating polyurethane, melamine, polyester, and silicone-based chemistries for coatings, adhesives, sealants and elastomers.

Booth 2
REPI LLC
2825 REPI Court, Dallas, TX 75234
704-648-0252
rep.usa@repi.com
www.repi.com
REPI LLC will introduce their brand new production facility in Dallas, NC, for faster response time and improved service capabilities to the American Market.
POSTER SESSION

Grand Ballroom D-E, Level 4

Chemistry
De-Formulating Complex Polymer Mixtures Involved with Polyurethane by GPC-IR
Coupled Technology
Ming Zhou, Spectra Analysis Instruments, Inc.
Tracy Phlipott, Spectra Analysis Instruments, Inc.
William Carson, Spectra Analysis Instruments, Inc.
Tom Kearney, Spectra Analysis Instruments, Inc.
Hydroxylated Ether of Resorcinol (HER) Derivatives
Tim Biggs, INDSPEC Employee

Poly-G Cure-2 Polyurethane Catalyst with Delayed Activity
Robert Hire, Lonza
Indulis Grzurne, Lonza
Brian Cooper, Lonza
Promoting Best Practices and Voluntary & Regulatory Risk Management Approaches for Diisocyanates in Polyurethane Products
Carol Heftled, US EPA
Katherine Sloanman, US EPA

Ultra Low Monol Polyls Produced by Ring-Opening Polymerization of Propylene Oxide Catalysted by Nano-Sized Double Metal Cyanide Catalysts Bearing Different Co-Complexing Agents
Lee in Kyu, KUMHO Petrochemical
Hui Seung Moo, KUMHO Petrochemical

Equipment & Processing
Automation of Production Systems for High Quality PU Elastomer Parts
Christian Decker, DESMA GmbH
Bjorn Dormann, DESMA GmbH

External Valving Applications for Mixing Heads
Otto Huber, Hi-Tech Engineering, Inc.

Extra-Large Plant for Just-In-Time Discontinuous Production of Wall and Roof Insulated Panels
Max Taverna, Cannon Group - Italy
Robert Verbruggen, Hi-Tech Engineering, Inc.

Innovative Method for the Production of Structural Elements of the Construction Industry
Max Taverna, Cannon Group - Italy
Andrea Gozzi, System Group

Temperature Measurement in PU Samples during the Chemical Reaction
Erland Hofmann, Format Messtechnik GmbH
Jeffrey Gross, Eurotech Distributors, Inc.

Various Metering and Mixing Methods of Expandable Graphite Flakes and the Effects on Part Size
Kelo Walvo, Edge-Sweets Company
Brian Brummel, Edge-Sweets Company

Flexible Foam & CASE
Mechanical Properties of Functionalized Graphene Sheets/Polyurethane Nanocomposite Elastomers
Danko Ljubic, Kansas Polymer Research Center
Zoran Petrovic, Kansas Polymer Research Center
Madhu Srinivasan, Kansas Polymer Research Center
Ivan Javni, Kansas Polymer Research Center
New Generation Acid/Alkali and Solvent Resistant Elastomers
Aditya Khadilkar, Jay Elastomers Pvt. Ltd.
Jayant Khadilkar, Jay Elastomers Pvt. Ltd.

Next Generation Reactive Hot Melt Polyurethane Adhesives
Lyle Callouette, BASF
Rifat Tabakovic, BASF
Heinz Plaumann, BASF

Polyurethane Foam Association: Critical Issues, Positions, and Related Activities
Robert Luadeka, Polyurethane Foam Association

Thermoplastic Polyurethane Elastomers With Mixed (D2-Hydroxethyl) Disulfide-1, 4-Butanediol Hard Segment
Ivan Javni, Kansas Polymer Research Center
Pittsburg State University, Pittsburg, KS, USA
Tom Upshaw, Chevron Phillips Chemical Co. LP
Bartlesville, OK, USA
Danko Ljubic, Kansas Polymer Research Center
Pittsburg State University, Pittsburg, KS, USA
Olevar Blic, Kansas Polymer Research Center
Pittsburg State University, Pittsburg, KS, USA
Zoran Petrovic, Kansas Polymer Research Center
Pittsburg State University, Pittsburg, KS, USA
Voranol™ 223-060LM Polyol: A Novel Dow Polyol for Use in High Performance Polyurethane Applications
Sven Claessen, Dow
Juan Carlos Medina, Dow
Mark Sommensen, Dow
Justin Virgili, Dow

Renewable & Recyclable Materials
Characteristics of Recycled Polyls Based on the Waste Rigid Polyurethane Foams of Refrigerator Scraps
Won Bae Pak, Jung Woo Free Corp.
Dai Soo Lee, Chonbuk National University
Complete Recovery of Flexible Polyurethane Wastes by Two-Phase Glycolysis
Diego Simin Herrera, University of Castilla - La Mancha
Ana Maria Borreguero Simin, University of Castilla - La Mancha
Antonio de Lucas Martinez, University of Castilla - La Mancha
Juan Francisco Rodriguez Romero, University of Castilla - La Mancha

Lignin Polyls for Rigid Polyurethane Foams
Mihail Ionescu, Pittsburg State University, Kansas Polymer Research Center
Xiamen Wan, Pittsburg State University, Kansas Polymer Research Center
Nikola Blic, Pittsburg State University, Kansas Polymer Research Center
Zoran Petrovic, Pittsburg State University, Kansas Polymer Research Center

Polyurethane Dispersions Derived From Soybean Oil Polyester Polyol
Phillip Dennen, Battelle Memorial Institute
Ramanathan Latgudi, Battelle Memorial Institute
Rick Heggs, Battelle Memorial Institute

Surfactants for Foam Applications Based on Biologically Derived Polyls
Brett Snyder, College of Charleston
Pat Cotnoir, Texas Tech
Ray McAfee, Carolina Specialty Chemicals
Neal Tonks, College of Charleston

Rigid Foams & Blowing Agents
Blowing Agent Blends for Refrigeration - the Next Paradigm
John Murphy, Foam Supplies, Inc.

Global Warming and Carbon Resource Evaluation of Foam Blowing Agents for Residential-use Polyurethane
Akira Sekiya, AIST
Sayuri Okamoto, AIST

Life Cycle Assessment of Spray Foam Insulation for Residential & Commercial Building Applications
Dick Duncan, Spray Polyurethane Foam Alliance
George Pavlovich, Bayer MaterialScience, LLC
Shen Tian, Bayer MaterialScience, LLC

Novel High Functional Aromatic Polyol Polyls for Polyurethane Foam Applications with 3rd or 4th Generation Blowing Agents
David Shein, Oxid L.P.
Matthew Nguyen, Oxid L.P.
CPI MEMBER COMPANIES

Air Products and Chemicals, Inc.
Albemarle Corporation
Arkema Inc.
Armor Thane
BASF Corporation
Bayer MaterialScience LLC
BioBased Technologies, LLC
Burtin Polymer Laboratories, Inc.
BYK-Chemie USA
Cannon USA
Cargill, Incorporated
Centria
CertainTeed Corporation
Chem-Trend LP
Clayton Corporation
Demilec USA LLC
De Neef Construction Chemicals, Inc.
DESMA GmbH
Dow
DuPont
DyPlast Products LLC
Everchem LLC
Evonik Goldschmidt Chemical
Foam Supplies, Inc.
Fomo Products, Inc.
Gaco Western LLC
The Gorilla Glue Company
Graco Ohio Inc.
Great Lakes Solutions
Hennecke Inc.
Henry Company
Hi-Tech Engineering, Inc.
Honeywell
Huntsman International LLC
ICL-IP America, Inc.
Icynene
Invista Terate® polyols
Isotec International, Inc.
Johns Manville Insulation Systems
Johnson Controls
KraussMaffei Corporation
Langeman Manufacturing Limited
LANXESS Corporation
Lapolla Industries, Inc.
Linden Industries, Inc.
Line-X Franchise Development Corp.
Lonza
MarChem Corporation
Michelin
Milliken Chemical
Momentive Performance Materials
NCFI Polyurethanes
OXID L.P.
Premium Spray Products
Quadrant Urethane Technologies
RHH Foam Systems Inc.
Rhino Linings USA, Inc.
Sealed Air Corporation
Siltech Corporation
Solvay
Stepan Company
SWD Urethane
Tri Pac, Inc
Troy Polymers, Inc.
TSE Industries, Inc.
Urethane Consulting Labs, LLC
Woodbridge Foam Corporation
Yantai Wanhua America Co., Ltd.
POLYURETHANES 2012 CONFERENCE PLANNING COMMITTEE

LEADERSHIP
Amanda Pugh, Chem-Trend LP, Conference Committee Chair
Anthony Lanchak, Momentive Performance Materials
Conference Committee Vice Chair
William Bunting, Evonik Goldschmidt Corporation, Poster Chair
Dale Hunter, Dow, Poster Vice Chair
Juan Carlos Medina, Dow, Polyurethane Professional Development Program Chair
Richard Werner, Cannon USA, Polyurethane Professional Development Program Chair
Wendy Rossman, Air Products and Chemicals, Inc.
Jim Tobias, Air Products and Chemicals, Inc.
Rich Laskodi, Altana
Gary Edwards, BASF Corporation
Mike Krupa, BASF Corporation
Gary Lambert, BASF Corporation
Ray Neff, BASF Corporation
Roy Pask, BASF Corporation
William Robert, BASF Corporation
Mitesh Shah, BASF Corporation
Walt White, BASF Corporation
Rick Adkins, Bayer MaterialScience, LLC
Ed Ball, Bayer MaterialScience, LLC
Susan McVey, Bayer MaterialScience, LLC
Julia Rubino, Bayer MaterialScience, LLC
Richard Skorpeneske, Bayer MaterialScience, LLC
Erin Kelly, BYK-Chemie USA
Bob Pierce, Cannon USA
Richard Werner, Cannon USA
Rich Rossio, Chem-Trend LP
Christian Decker, DESMA GmbH
Randal Autenrieth, Dow
Teri Clements, Dow
Dale Hunter, Dow
Allan James, Dow
Melissa Jones, Dow
Jeff King, Dow
Will Koonce, Dow
Juan Carlos Medina, Dow
William Bunting, Evonik Goldschmidt Corporation
Peter Hohl, Evonik Goldschmidt Corporation
Ann Roche, Foam Supplies, Inc.
Kevin Arsenault, Graco Ohio, Inc.
Barry Metzler, Graco Ohio, Inc.
Lutz Heidrich, Hennecke Inc.
John Tolley, Hennecke Inc.
Mary Bogdan, Honeywell
Cheryl Medici, Honeywell
Umbrerto Torresan, Honeywell
David Williams, Honeywell
Greg Banks, Huntsman International LLC
Todd Bates, Huntsman International LLC
Gary Chapman, Huntsman International LLC
Derek Crofton, Huntsman International LLC
Glyn Davies, Huntsman International LLC
Cynthia Graham, Huntsman International, LLC
Robert Grigsby, Huntsman International LLC
Roger Hennington, Huntsman International LLC
Monica Karamagi, Huntsman International LLC
Robert Lockwood, Huntsman International LLC
Don Ridgway, Huntsman International LLC
Daniel Rosenvasser, Huntsman International LLC
Eric Stebel, Huntsman International LLC
Mike Nagridge, ICL-IP America Inc.
Curtis Reichel, TSE Industries, Inc.
Hamdy Khalil, Woodbridge Foam Corporation
POLYURETHANES 2012 CONFERENCE
SESSION ORGANIZERS

James Tobias, Air Products and Chemicals, Inc.
Mike Krupa, BASF Corporation
Raymond Neff, BASF Corporation
William Robert, BASF Corporation
Ed Ball, Bayer MaterialScience LLC
Dick Werner, Cannon USA
Heather Patrey, Center for the Polyurethanes Industry of the American Chemistry Council
Rich Rossio, Chem-Trend LC
Randal Autenrieth, Dow
Allan James, Dow
Juan Carlos Medina, Dow
Barry Metzler, Graco Ohio, Inc.
John Tolley, Hennecke Inc.
David Williams, Honeywell
Todd Bates, Huntsman International, LLC
Cynthia Graham, Huntsman International, LLC
Monica Karamagi, Huntsman International, LLC
Don Ridgway, Huntsman International, LLC
Daniel Rosenvasser, Huntsman International, LLC
Mike Nagridge, ICL-IP America Inc.
Allison Yeske, Momentive Performance Materials
Ken Willoughby, Momentive Performance Materials

POLYURETHANES 2012 CONFERENCE
SESSION MODERATORS AND VICE MODERATORS

James Tobias, Air Products and Chemicals, Inc.
Mike Krupa, BASF Corporation
Roy Pask, BASF Corporation
Heinz Plaumann, BASF Corporation
William Robert, BASF Corporation
Mitesh Shah, BASF Corporation
Ed Ball, Bayer MaterialScience LLC
Jose Luna, Bayer MaterialScience LLC
Bill Nicola, Bayer MaterialScience LLC
George Pavlovich, Bayer MaterialScience LLC
Jack Dai, Cargill, Inc.
Randal Autenrieth, Dow
Dale Hunter, Dow
Barry Metzler, Graco Ohio, Inc.
John Muto, Hennecke, Inc.
David Williams, Honeywell
Todd Bates, Huntsman International, LLC
Rafael Camargo, Huntsman International, LLC
Cynthia Graham, Huntsman International LLC
Robert Grigsby, Huntsman International, LLC
Daniel Rosenvasser, Huntsman International, LLC
Nathan Smith, Huntsman International, LLC
Eric Stebel, Huntsman International, LLC
Mike Nagridge, ICL-IP America Inc.
Hamdy Khalil, WoodBridge Foam Corporation
LEADERSHIP
Steven Snead-Smith, Evonik Goldschmidt Corporation
CPI Steering Committee Chair
Gerry Podesta, BASF Corporation
CPI Steering Committee Vice Chair
Lee Salamone
Senior Director
Center for the Polyurethanes Industry of the American Chemistry Council

STAFF
Lindsay Rayfield
Manager, Industry Affairs
Center for the Polyurethanes Industry of the American Chemistry Council
Heather Palfrey
Manager, Environmental, Health and Safety
Center for the Polyurethanes Industry of the American Chemistry Council
Chris Braddock
Director, Polyurethanes Markets
Center for the Polyurethanes Industry of the American Chemistry Council
Aiysha Joseph
Coordinator
Center for the Polyurethanes Industry of the American Chemistry Council
Andrew MacCachran
Director, Meeting Services
American Chemistry Council
Carmen Benns
Director, Marketing & Program Development
American Chemistry Council
Schubert Fabros
Manager, Marketing & Program Development
American Chemistry Council
Marie Francis
Manager, Product/Panel Communications
American Chemistry Council

CONFERENCE MANAGEMENT
Mary Novack, President
Novack Management, Inc.

PUBLIC RELATIONS
Jacquelyn Priestly, Program Director
Karen Heinold, Project Manager
Potomac Communications Group, Inc.
The Center for the Polyurethanes Industry of the American Chemistry Council and the 2012 Polyurethanes Technical Conference Planning Committee would like to thank our 2012 Sponsors for their generous support of the Conference, CPI and the Industry.
frigid loves rigid

BASF rigid foam polyurethane insulation provides superior thermal performance and outstanding sealing properties. So appliances score higher on energy efficiency. And that’s just for starters. From lighter automotive parts, to more comfortable and eco-friendly homes, from aesthetically appealing and durable furniture and bedding, to reliable gas and oil pipelines – we have the molecular versatility to design custom polyurethane solutions for any application anywhere in the world. Because at BASF, we create chemistry. Learn more at www.polyurethanes.basf.us
Science For A Better Life

Poyurethanes from Bayer MaterialScience

All the ingredients for success.

Bayer MaterialScience

www.bayermaterialsciencenafta.com
Every Step of the Way
It was 75 years ago that scientists took the first step in polyurethane chemistry, and, from that moment on, the industry has moved the world forward with innovations that have made our lives more comfortable, more energy efficient and more fun. Dow Polyurethanes is proud to have been a part of that history and continues to develop innovative solutions that help keep our customers a step ahead of ever-changing industry requirements. Solutions like our VORANOL™ polyols for viscoelastic and high-resilience foam solutions, which help our customers tailor formulations to a desired comfort level … and get a jump on improved product performance.
"You’re so cool."
Perfect insulation of fridges is what keeps stuff inside them cool and fresh and lasting. Perfect insulation makes fridges more efficient and environmentally friendly – and saves the consumers money. Developing additives to continuously improve the insulation properties of refrigerators and freezers is our goal. That’s how we support you innovating systems and formulations that meet the ultimate goal: climate conservation. We help you to shape our future fridges, as we understand products’ and people’s needs.

Do you speak foam? We do.

Evonik Goldschmidt Corp.
914 E. Randolph Road   Hopewell, Virginia 23860, USA
PHONE +1 804 541-8658   FAX +1 804 541-2783
steven.p.snead-smith@evonik.com
www.evonik.com/polyurethane-additives
At Huntsman Polyurethanes, we believe that working in true collaboration with customers is the only way to solve complex problems and find the solutions that will deliver real innovation.

So, we strive with a passion and determination to build the deep understanding of our customers that’s required to get to the heart of their needs and establish lasting partnerships.

When it comes to creating better durability in critical structures such as bridges, we’ll work with you to produce tailored MDI-based coatings that provide enhanced structural integrity and protection against corrosion. Combine our knowledge of coatings with your expertise, and we’ll create better bridges… together.

www.huntsman.com/pu
Terol® Aromatic Polyester Polyols

2012 Industry Reception Sponsor

www.oxid.net
THE POLYURETHANES MAGAZINE
AVAILABLE IN ENGLISH, GERMAN AND CHINESE LANGUAGE!

Focusing on technical information about:
- Machinery · Raw materials · Testing equipment · Handling
- Flexible foams · Rigid foams · Integral skin products
- Coatings · Sealants · Adhesives · Elastomers · Recycling
- Automotive · Footwear · Construction · Furniture ...

P. O. Box 10 41 25 · 40852 Ratingen / Germany · Tel. +49 2102 9345-0
Fax +49 2102 9345-20 · info@gupta-verlag.de · www.pu-magazine.com
Evolution in Formulation

Bringing our specialty ester chemistry to rigid & flexible foams, and C.A.S.E. applications
The ONLY audited international publication in the world dedicated to polyurethanes

The leading international exhibition and conference for the global PU industry

FREE Utech Europe Conference proceedings with every subscription

The leading exhibitions for the Chinese PU Industry
FUTURE CONFERENCES

2013 Polyurethanes Technical Conference
September 23 – 25, Phoenix, Arizona

2014 Polyurethanes Technical Conference
September 22 – 24, Dallas, TX

2015 Polyurethanes Technical Conference
October 5 – 7, Orlando, FL