



# Polytopics

Quarter 2 - 2007

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## Upcoming Events:

**2008 PTS**  
**May 3-4, 2008**

**2008 Annual Meeting**  
**May 4-6, 2008**

**Hyatt Regency**  
**San Antonio, TX**

## Polyurethane Manufacturers Association (PMA)

6737 W. Washington St.  
Suite 1420  
Milwaukee, WI 53214  
Ph: 414-431-3094  
Fax: 414-276-7704  
info@pmahome.org  
[www.pmahome.org](http://www.pmahome.org)

## Final Comments Due on ACGIH TDI TLV/BEI

*by Donald P. Gallo, Esq., P.E., Reinhart Boerner Van Deuren s.c.*

The American Conference of Governmental Industrial Hygienists ("ACGIH") in 2006 announced new recommended occupational exposure guidelines for Toluene-2, 4-diisocyanate and Toluene-2, 6-diisocyanate ("TDI"). In 2004, ACGIH released updated documentation for TDI that retained the existing exposure guidelines – TLV-TWA of 5 ppb and TLV-STEL of 20 ppb – and added a sensitization notation. ACGIH has proposed to lower its recommended TWA and STEL to 1 and 3 ppb, respectively.

The committee members are preparing for the decisions that will be made during the fall meeting of the ACGIH Threshold Limit Values for Chemical Substances Committee regarding Toluene-2, 4- and 2, 6-diisocyanate ("TDI"). The Committee has received the information submitted by PMA for use as part of its deliberations, and will be considering the status of the Notice of Intended Changes ("NIC") for TDI and its possible recommendation for adoption in 2008.

The comment period for a NIC draft Documentation and its respective Threshold Limit Values ("TLVs") and notation(s) is limited to a firm six-month period, running from February 1 to July 31 of each year. Because of the time required to properly review, evaluate and consider comments for the fall meeting, any comments received after the deadline of July 31, 2007 will not be considered for this year's deliberations. All comments received after July 31 will be fully considered next year.

Note that the Diisocyanates Panel of the American Chemistry Council, which includes major manufacturers of TDI: BASF Corporation, Bayer Materials Science, The Dow Chemical Company and Huntsman Corporation, has submitted extensive comments. PMA also submitted comments to ACGIH in November 2006. PMA's comments note that the focus on lower TLVs may be a misplaced

attempt at workplace protection when improvement to skin contact may be a much better focus. PMA also pointed out that this lower exposure level may be very difficult for industries to monitor. The ACGIH standard is only a guideline and should not be confused with exposure limits having a regulatory status, like those published and enforced by the Occupational Safety and Health Administration ("OSHA"). However, many of the OSHA regulatory exposure limits (all PELs published in 29 CFR 1910.1000) are based on the 1969 ACGIH TLVs when the OSHA Act was adopted by Congress.

The Threshold Limit Value ("TLV") of a chemical substance defines the reasonable level to which a worker can be exposed without adverse health effects. Strictly speaking, TLV is a reserved term of the American Conference of Governmental Industrial Hygienists ("ACGIH"). It is, however, sometimes loosely used to refer to other similar concepts used in occupational health and toxicology. TLVs (along with biological exposure indices ("BEIs")) are published annually by the ACGIH.

The TLV is an estimate based on the known toxicity in humans or animals of a given chemical substance and the reliability and accuracy of the latest sampling and analytical methods. It is not a static definition since new research can often modify the risk assessment of substances and new laboratory or instrumental analysis methods can improve analytical detection limits. The TLV is a recommendation by ACGIH, with only a guideline status. As such, it should not be confused with exposure limits having a regulatory status, like those published and enforced by the Occupational Safety and Health Administration ("OSHA"). Many of the OSHA regulatory exposure limits (all PELs published in 29CFR 1910.1000) are based on the 1969 ACGIH TLVs when the OSH Act was

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adopted by Congress and so are dated/over 30 years old and are not considered by the industrial hygiene community as protective levels of exposure to chemicals. The National Institute of Occupational Safety and Health ("NIOSH") publishes RELs (recommended exposure limits) which OSHA takes into consideration when promulgating new regulatory exposure limits.

### **Definitions**

The TLV for chemical substances is defined as a concentration in air, typically for inhalation or skin exposure. Its units are in ppm for gases and in mg/m<sup>3</sup> for particulates (aerosols such as dust, fumes and mist).

Three types of TLVs for chemical substances are defined:

#### **Threshold Limit Value – Time Weighted Average** ("TLV-TWA")

average exposure on the basis of 8h/day, 40h/week work schedule  
(Existing for TDI = 5 ppb; proposed for TDI = 1 ppb)

#### **Threshold Limit Value – Short Term Exposure Limit** ("TLV-STEL")

spot exposure for a duration shorter than 15 minutes, that cannot be repeated more than 4 times per day  
(Existing for TDI = 20 ppb; proposed for TDI = 3 ppb)

#### **Threshold Limit Value – Ceiling** ("TLV-C")

absolute exposure limit that should not be exceeded at any time

There are TLVs for physical agents as well as chemical substances. TLVs for physical agents are also defined in terms of what are considered safe levels (8 hours per day and 40 hours per work week). There are TLVs for noise exposure, vibration exposure, ionizing and non-ionizing radiation exposure and heat and cold stress.

You may wish to submit comments to ACGIH by July 31, 2007. When submitting comments, ACGIH prefers that the submission be limited to ten (10) pages in length, including an executive summary. The submission may include appendices of citable material not included as part of the ten page limit.

It would be very beneficial to structure comments as follows:

1. Provide an Executive Summary with a limit of 250 words;
2. Identify, in a vertical list, specific Recommendations/Actions that you are requesting;
3. Provide specific Rationale to justify each Recommendation/Action requested; and
4. Provide citable material to substantiate the Rationale. ACGIH uses only citable material during the TLV/BEI Development process. Citable material is data that is available in the public domain or that ACGIH has written authorization from the owner to use. For unpublished data/studies, it is important for this authorization to accompany the submission and it must grant ACGIH permission to use, cite and release the data.

## **Potential New California Occupational Standards for Diisocyanates**

*by Donald P. Gallo, Esq., P.E.  
Reinhardt Boerner Van Deuren s.c.*

In March 2007, DOSH issued a final draft of Policy and Procedure for the Advisory Committee Process for Permissible Exposure Limit ("PEL") Updates to Title 8, Section 5155, Airborne Contaminants<sup>1</sup>, which outlines the process to be used to develop proposals for new or revised PELs. The first step of this process is for DOSH staff to develop a list of existing and new airborne contaminant substances to be reviewed for possible inclusion or update to Table AC-1 of Section 5155. DOSH staff will then prioritize the list of substances, followed by an initial advisory meeting to review the entire list of substances to be considered.

The list of substances for review is now posted on the DOSH website<sup>2</sup>. Each substance has been given a priority of 1 to 4. Priority 1 substances are given the highest priority for DOSH's health expert advisory committee ("HEAC") to review. Diisocyanates are listed as a Total Reactive Isocyanate Group ("TRIG") and have been given a priority of 1. DOSH is proposing an Occupational Exposure Limit Time Weighted Average of 0.017 mg/m<sup>3</sup> ("TWA") and a Short-Term Exposure Limit ("STEL") of 0.07 mg/m<sup>3</sup> (as NCO). DOSH held an initial advisory meeting on June 19, 2007 in Oakland, CA.

### **Additional information:**

Information on the initial advisory meeting can be obtained by contacting Steve Smith (916-574-2996 or [ssmith@dir.ca.gov](mailto:ssmith@dir.ca.gov)) or Bob Barish (510-286-7001 or [bbarish@dir.ca.gov](mailto:bbarish@dir.ca.gov)).

General information can be obtained through your diisocyanates supplier or the following individuals at the American Chemistry Council:

#### **Stephanie M. Bernard**

Center for the Polyurethanes Industry  
Interim Manager for ACC Diisocyanates Panel  
703-741-5661 [stephanie\\_bernard@americanchemistry.com](mailto:stephanie_bernard@americanchemistry.com)

#### **Andrew Jaques**

Interim Manager for ACC Aliphatic Diisocyanates Panel  
703-741-5627 [andrew\\_jaques@americanchemistry.com](mailto:andrew_jaques@americanchemistry.com)

And we want to thank the:

- Aliphatic Diisocyanates Panel of the American Chemistry Council ("ADI")
- Center for the Polyurethanes Industry of the American Chemistry Council ("CPI")
- Diisocyanates Panel of the American Chemistry Council ("DII") for their efforts to monitor the California DOSH standards for diisocyanates.

### *Footnotes*

- 1 [www.dir.ca.gov/dosh/doshreg/PEL-Process-3-07-final-draft.pdf](http://www.dir.ca.gov/dosh/doshreg/PEL-Process-3-07-final-draft.pdf)
- 2 [www.dir.ca.gov/dosh/doshreg/5155Meetings.htm](http://www.dir.ca.gov/dosh/doshreg/5155Meetings.htm)