



SCHC Monthly Newsletter

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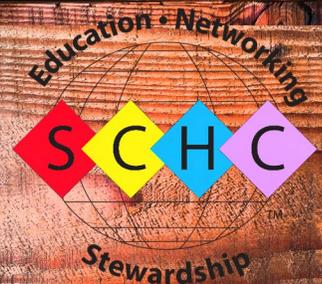


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California Proposition 65 Rulemaking: Establishment of MADL for Bisphenol A

[Read More Here](#)

Fall Meeting Reminder

SCHC Fall 2016 Meeting Reminder: 24-28 September at the Crystal Gateway Marriott in Arlington, VA. Hotel reservations can be made [Here](#).

Canada Releases Technical Guidance on the Requirements of the Hazardous Products Act, Phase 1

Health Canada has released Phase 1 of their guidance on WHMIS 2015. This part focuses on classification principles, hazard communication and confidential business information. Phase 2 (expected this fall) will cover physical and health hazard classification. Phase 1 is available on request [Here](#).

First Aid Measures: Your Free Guide

Chemical Risk Manager – the new product safety resources hub from Chemical Watch – is delighted to present an invaluable new guide to writing first aid measures, for inclusion within safety data sheets. Written by a toxicologist and expert in hazard and risk communication for workplaces, the guide provides practitioners with expertise and practical suggestions to help them in their work. Download your free guide [Here](#).

I've Got No Test Data – How Do I Know if I Have a Combustible Dust

Sharen B. Breyer (Galata Chemicals LLC) – SCHC HazCom Resources Committee

The US Chemical and Safety Hazard Investigation Board has identified over 300 combustible dust incidents since 1980 that resulted in loss of life and widespread property damage. The National Fire Protection Association (NFPA) began publishing an NFPA Standard that addressed combustible dust over 40 years ago. OSHA adopted a combustible dust hazard classification as part of HAZCOM 2012. There is no doubt that combustible dust is a very serious and potentially lethal physical hazard.

OSHA has not yet released the Combustible Dust Standard, so there is no official definition of a combustible dust. Measurements of 420 microns and 500 microns have been suggested as threshold values for particle size, but there are instances



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I've Got No Test Data – How Do I Know if I Have a Combustible Dust (Cont.)

and conditions where larger particles or even non-dusty solids can still present a dust explosion hazard. While we await clarity, we are not relieved of our obligation to evaluate our products for this hazard, and OSHA indicates that laboratory testing, published test results, experience with the product and particle size determinations can be used for this evaluation.

www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=INTERPRETATIONS&p_id=28880

No doubt - the best way to determine if your product is a combustible dust is via testing, as physical properties of your particular material can and do affect the results. However, the OSHA Hazard Communication Standard does not require the testing of chemicals – only the collection and analysis of currently available data. So how do you determine if your products pose a combustible dust hazard and/or build a case for contracting for combustible dust testing if you have no actual data? There are resources available online and perhaps also within your company that can help.

ONLINE: A good place to start is the OSHA website and a look at their Combustible Dust Poster at www.osha.gov/Publications/combustibledustposter.pdf. This poster lists over 100 substances, from adipic acid to cornstarch to powdered zinc to phenolic resin, than are known to be combustible dusts. If your product is, or contains a large quantity of, any of these materials, you may have a potential combustible dust.

Actual test data on some common substances can be found in the Gestis-Dust- EX database from the Institute for Occupational Safety and Health of the German Social Accident Insurance at [www.dguv.de/ifa/GESTIS/GESTIS-STAUB- EX/index-2.jsp](http://www.dguv.de/ifa/GESTIS/GESTIS-STAUB-EX/index-2.jsp). The website is available in both German and English, and searching can be done by chemical name or material description, but not CAS#. A search for “calcium stearate” pulls up 20 records that include explosibility classification and minimum ignition energy values for dusts of various particle sizes. Search for “ABS resin” and you will find this:

Results

Search for : ABS resin / number of results : 1

MATERIAL	MEDIAN VALUE [µm]	EXPLOSIBILITY	MINIMUM IGNITION ENERGIE [MJ]
Plastic, ABS, Resin	38	St 1	10/30

Another potential data repository is the Hazardous Substance Database (HSDB), part of the TOXNET collection of sources maintained by the U.S. National Library of Medicine. Under the Chemical/Physical Properties of the selected substance (Zinc Stearate CAS# 557-05- 1, for this example) you will find:

Explosive Limits & Potential:

The finely powdered soap is a significant dust explosion hazard. **[Bretherick, L. Handbook of Reactive Chemical Hazards. 4th ed. Boston, MA: Butterworth-Heinemann Ltd., 1990, p.914] **PEER REVIEWED****



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I've Got No Test Data – How Do I Know if I Have a Combustible Dust (Cont.)

Size matters! OSHA considers a combustible dust to have a particle size of 420 microns or less. Other consensus standards use 500 microns as the threshold. You may have particle size information available to you on a Technical Data Sheet or it may be a standard QA/QC measurement run by your lab and reported on the Certificate of Analysis.

But what if your company measures particle size and reports this in a different way, like mesh size or millimeters or even inches? Go to this website: www.showmegold.org/news/Mesh.htm and you will find a useful conversion chart that will help you quickly determine if your powdered material falls into the combustible dust particle size range.

OSHA guidance on combustible dust states, “Different dusts of the same chemical material can have different ignitability and explosibility characteristics, depending upon physical characteristics such as particle size, shape, and moisture content. These physical characteristics can change during manufacturing, use or while the material is being processed”. So we must also consider the ability of our products to generate a combustible dust during transport to the customer and in any mixing, grinding, blending or materials handling system in use at their worksite. Are fines easily generated from the product? Is it an aqueous solution that can dry out and leave a very fine, powdery residue?

WITHIN YOUR COMPANY: Is the product manufactured, handled and packaged using procedures and equipment that suggest the potential for a dust explosion was considered when the unit was designed? For instance, is there a dust collection system/bag house or a reference to NFPA 645, the Standard for the Prevention of Fire and Dust Explosions from the Manufacturing, Processing and Handling of Combustible Particulate Solids? If the product is packaged in FIBC bulk bags, are they grounded bulk bags? If you are lucky, you may find that there was actual dust explosion testing done during the process development stage, and that valuable data is buried somewhere in the engineering design documents.

COMMUNICATING THE HAZARD: So if you find enough evidence to determine that you may have a combustible dust hazard, OSHA offers guidance on communicating that hazard on the SDS and Safety Label. Obviously the hazard should be mentioned in Section 2 (HAZARDS IDENTIFICATION) of the US OSHA SDS, but additional statements in Sections 5 (Firefighting Measures), 6 (Accidental Release Measures), 7 (Handling And Storage), 8 (Exposure Controls And Personal Protection), 9 (Physical And Chemical Properties) 10 (Stability And Reactivity) And 16



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I've Got No Test Data – How Do I Know if I Have a Combustible Dust (Cont.)

(Other Information) can also be used to reinforce this and warn against dust formation, especially in confined areas, and to stress housekeeping and cleanup procedures that minimize or eliminate dust. Adding appropriate phrases in these SDS sections aids in communication of this serious hazard in other SDS formats and for other countries that have not (yet) adopted Combustible Dust as a recognized physical hazard.

LEARN MORE: Go to www.osha.gov/dsg/combustibledust/ for OSHA's Hazard Communication Guidance on Combustible Dust and information on understanding and controlling the potential for dust explosions.

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The SCHC Newsletter is a monthly publication of the Society for Chemical Hazard Communication. SCHC Members are encouraged to submit a title or short statement on any topic in the HazCom field along with a link to: design@m2columbus.com.