



U. S. Chemical Safety and Hazard Investigation Board RECOMMENDATION STATUS CHANGE SUMMARY

Report:	Barton Solvents Explosions and Fire
Recommendation Number:	2007-6-I-KS-R2
Date Issued:	June 26, 2008
Recipient:	Occupational Safety and Health Administration (OSHA)
New Status:	Closed – Acceptable Action
Date of Status Change:	October 26, 2021

Recommendation Text:

Prior to the next revision, communicate to the Sub-Committee on the Globally Harmonized System of Classification and Labeling of Chemicals (SCEGHS) the need to amend the GHS to advise chemical manufacturers and importers that prepare MSDSs to:

- *Identify and include a warning for materials that are static accumulators and that may form ignitable vapor-air mixtures in storage tanks.*
- *Advise users that bonding and grounding may be insufficient to eliminate the hazard from static-accumulating flammable liquids, and provide examples of additional precautions and references to the relevant consensus guidance (e.g., NFPA 77, Recommended Practice on Static Electricity (2007), and API Recommended Practice 2003, Protection Against Ignitions Arising Out of Static, Lightning, and Stray Currents (2008)).*
- *Provide conductivity testing data for materials that are static accumulators and that may form ignitable vapor-air mixtures in storage tanks.*

Board Status Change Decision:

A. Rationale for Recommendation

The U.S. Chemical Safety and Hazard Investigation Board (CSB) conducted an investigation of an explosion and fire at the Barton Solvents distribution facility in Valley Center, Kansas on July 17, 2007. The explosion led to an evacuation of thousands of residents and resulted in projectile damage offsite, as well as extensive damage to the facility. The investigation concluded that an above ground storage tank contained a vapor-air mixture in its head space that ignited to cause the explosion. Stop-start filling, air in the transfer piping and sediment and water likely caused a rapid static charge accumulation inside the varnish makers and painters (VM&P) naphtha tank, and a spark from the float gauge likely ignited the vapor inside the tank.

The CSB noted as a part of its investigation that the safety data sheet (SDS) [previously referred to as material safety data sheets (MSDS)¹] from the manufacturer of the Barton VM&P naphtha indicated that the material could build up a static electrical charge, which could discharge and ignite accumulated vapor. It did not, however, provide critical physical and chemical property

¹ In the 2012 revised HCS adopting the GHS, the term “Safety Data Sheets” replaces the older term “Material Safety Data Sheets”

data that would warn that the material may form an ignitable vapor-air mixture inside storage tanks. In addition, it did not list any precautionary measures, beyond normal bonding and grounding practices, or reference relevant consensus guidance that Barton could have used to help prevent the explosion.

The Occupational Safety and Health Administration (OSHA) specifies the information required to appear on SDSs under its hazard communication standard (HCS), 29 CFR 1910.1200. On September 12, 2006, OSHA published an Advance Notice of Proposed Rulemaking in the *Federal Register* (71 FR 53617), indicating their intent to adopt the Globally Harmonized System of Classification and Labeling of Chemicals (GHS) guidance into the requirements of the HCS. The GHS is an international consensus on criteria for classifying chemical hazards for international distribution, and to create consistent requirements for SDSs. A review of the then current GHS criteria [2007 edition] by the CSB revealed that while it contained specific criteria for identifying and classifying flammable liquids, it did not provide identification criteria or warning guidance for liquids that, in addition to being ignitable inside tanks at ambient temperatures, also accumulate static electricity that can ignite them. In addition, the GHS does not require a preparer to include conductivity testing data in an SDS.

As OSHA participated in the GHS criteria development process, the CSB recommended that OSHA communicate to the Sub-Committee of Experts on the Globally Harmonized System of Classification and Labeling of Chemicals (SCEGHS) the need to amend the GHS to advise chemical manufacturers and importers that prepare SDSs on the hazards associated with static accumulating flammable liquids.

B. Response to the Recommendation

On March 12, 2012, OSHA published its Final Rule on revisions to its HCS, incorporating the GHS criteria in the *Federal Register* [58 FR 17574]. The revised HCS requires that static accumulators fall within a new category called “hazards not otherwise classified (HNOC)” and that this information is required to be placed in Section 2 [e.g., Hazard Identification] of the SDS and noted that the GHS already identified this as the appropriate place in its guidance on the contents of SDSs.

OSHA stated that they discussed the CSB recommendation at multiple Subcommittee Working Group sessions between June of 2011 and July of 2012 as a part of their biennium meetings, but the Working Group decided not to forward the matter to the larger subcommittee for action. However, the GHS specifies certain precautionary statements to be applied in the prevention, response, storage and disposal sections of the SDS when a hazard is identified in Section 2. Although the GHS criteria does not specify that manufacturers or importers list associated national consensus standards for static accumulators or provide conductivity testing information on an SDS, inclusion of this additional information is not prohibited and there are categories on the SDS where it can be listed (e.g., Section 9—Physical and chemical properties and Section 15—Regulatory information). Other consensus standards issued by the American National Standards Institute (ANSI) and the American Petroleum Institute (API) advise manufacturers/importers of static accumulators to provide references to other sources of information for controlling hazards and to list conductivity information when it is available on SDSs.

C. Board Analysis and Decision

Based on the preceding information, the underlying requirement of the recommendation to address static accumulator information has been addressed and despite the United Nations Economic Commissions of Europe (UNECE) Sub-Committee of Experts on the Globally Harmonized System of Classification and Labeling of Chemicals not taking the requested action, OSHA performed the required communication to them, therefore the Board voted to change the status of **CSB Recommendation No. 2007-6-I-KS-R2** to: **“Closed – Acceptable Action.”**