

Case Study 1

Commodity Chemical Reclassification to Allow for Safe and Compliant Distribution

It is important for regulatory agencies to upgrade standards to allow in part for harmonized global rules that promote international business. However, regulatory changes can have a direct impact on companies that transport goods and materials.

In one instance, a company had distributed and sold a commodity chemical designated as “Chemical A” for many years. This material was in part used as a peptide coupling reagent. This compound can be found in catalogues of commercial fine chemicals. The Material Safety Data Sheet (MSDS) for Chemical A did not reference any explosive issues. However, materials that are highly energetic now regularly come to the attention of regulatory authorities in every country and this information is shared among them. When Chemical A was found to have high decomposition energy, it came to the attention of a number of regulatory agencies in the USA, which prompted a review of how this chemical was classified for transportation purposes. Small-scale UN/DOT tests determined Chemical A to have explosive properties.

Chilworth Technology, Inc. (CTI) was asked to review the small-scale test results and determine if Chemical A was properly classified. CTI concluded there was a need for large-scale testing to provide additional information to more accurately define the transportation dangers associated with Chemical A. Large-scale testing was conducted using approved UN/DOT methods. The conclusion from the large-scale tests was that this packaged material does not present a mass explosion hazard under test conditions. This strategy effectively removed Chemical A from the explosive classification, which allowed the client to reclassify this material.

It has been our experience that the transportation test data for each good and/or material should be carefully reviewed at regular intervals, to ensure it is placed in the correct UN/DOT class.

Chilworth Technology, Inc. has fully equipped laboratories to conduct all the required tests and consulting staff to provide advice on a classification of a chemical, for transport and storage purposes, as per the UN/DOT regulations. If you have any questions or wish to speak to a process safety specialist regarding any process safety concern, please contact us at 609-799-4449 or email us at safety@chilworth.com.