

Boric Acid

For several years there have been proposals to classify boric acid for reproductive toxicity. In spite of continued opposition from industry and without the agreement of the WHO Technical Barriers to Trade Committee, the EC decision to classify boric acid was finally published in September 2008. Classification will be required from June 2009.

Borates Suppliers

The position of the major European borates suppliers is that classification is unwarranted. They assert that borates do not pose any *risk* to human health. The EC decision was based on potential *hazards*, determined by exposures that are not relevant to people, even those who work with borates every day. Nevertheless, the borates industry is fully committed to compliance with the new requirements and is working with downstream user groups and customers, including manufacturers of metalworking fluids and additives.

Classification

Boric acid and certain other borate substances on a specific positive list are to be classified as Category 2 Reproductive Toxins. The requirement to classify and label according to the new legislation takes effect from June 2009. Also taking effect in 2009, a new regulation that deals with how classification and labelling are applied is being introduced. Currently, classification and labelling are applied according to the Dangerous Substances and Preparations Directives. These directives are being replaced with the introduction of the CLP Regulation, the European version of the Globally Harmonised System of Classification and Labelling of Chemicals, or GHS. Its effects will be phased in over a number of years.

Classification and labelling requirements for the newly classified borates under each system are summarised below:

Classification and Labelling under the Current System (Dangerous Substances Directive)		Classification and Labelling under the New System (CLP Regulation / Globally Harmonised System)	
Classification	Toxic to Reproduction, Category 2	Classification	Toxic to Reproduction, Category 1B
Symbol		Pictogram	
Indication of Danger	(none required)	Signal Word	Danger
Risk Phrases	R60: May impair fertility R61: May cause harm to the unborn child	Hazard Statements	H360F: May damage fertility H360D: May damage the unborn child

Scope of the New Classification

The new classification will be applied to boric acid and to a specific list of other borates, namely boric oxide and several sodium borates including borax. Other borates and reaction products of boric acid are not included within the new requirements.

Where these substances are present in preparations or mixtures, specific concentration limits apply before the preparation also has to be classified and labelled in the same way. The concentrations are much higher than the default values. For boric acid it is 5.5%, which means that only those preparations containing 5.5% or more of boric acid have to be classified in this way. The specific concentration limits of the other borates are broadly in line with their borate content.

Companies that Handle Boric Acid

The new classification will have a direct impact upon companies handling boric acid. In due course, it is expected that borates suppliers will provide some guidance, although it is the responsibility of each company that uses boric acid to ensure that it complies with the new requirements. In general, risk assessments, medical monitoring and waste handling will need to be reviewed.

The new classification has no effect on transport regulations. Boric acid and the other classified borates are not considered to be dangerous goods for transport.

Boric Acid in Additives and Metalworking Fluid Concentrates

In metalworking fluids, boric acid is used as a starting material for a wide range of corrosion inhibitors. This is most commonly achieved by reaction with alkanolamines. Boric acid based corrosion inhibitors are produced by additive manufacturers for sale to metalworking fluid formulators. Some formulators also use boric acid themselves. Consequently, the specific nature of the active ingredients in the corrosion inhibitors is complex and they can vary enormously in their chemistry. Given this complexity, it is a matter for individual manufacturers and formulators to determine the chemical nature of their products and to advise their downstream users accordingly.

In most metalworking fluids, the borate compounds are present at a level below the threshold for classification of boric acid. In additives and a small proportion of fluids, the concentration of the active ingredient is higher, and the potential for the presence of unreacted boric acid has to be considered.

Users of Metalworking Fluids

It is highly unlikely that metalworking fluid concentrates supplied by UKLA members will be classified on account of the concentration of borates present within the formulations. On dilution to emulsions of usable strength, the concentrations of all the ingredients are much lower.

The Metalworking Fluid Product Stewardship Group

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The Metalworking Fluid Product Stewardship Group exists to promote the industry's commitment to the development, manufacture and marketing of safe and effective metalworking fluid products. It will assist in the education of users, enhance the health and safety provision to both the members and their customers' employees, protect the environment and provide qualified, reviewed information to industry, trade unions, Government and the general public.

Member companies have each subscribed to the principles of product stewardship in respect of their metalworking fluids businesses and have signed a commitment to a common code of ethics.

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