



WORLD CUSTOMS ORGANIZATION  
ORGANISATION MONDIALE DES DOUANES

Established in 1952 as the Customs Co-operation Council  
Créée en 1952 sous le nom de Conseil de coopération douanière

SCIENTIFIC SUB-COMMITTEE

41.686 E

-  
13th Session

O.Eng.

-  
SC-3

Brussels, 1 December 1997.

CLASSIFICATION OF CERTAIN BENTONITE BASED PRODUCTS

(Item II.18 on Agenda)

Reference documents :

40.720 (HSC/18)  
41.600 Annex G/2 (HSC/20 - Report)

I. BACKGROUND

1. At its 20th Session (November 1997), the Harmonized System Committee examined the classification of two products, each consisting of a mixture of natural calcium bentonite and soda ash (or sodium carbonate). According to the Canadian Administration, which brought this question before the Committee, the products in question consist of natural calcium bentonite which has been mixed with a small amount of sodium carbonate (1% to 4%) [see Examples below]. Water is normally added by the user to facilitate an exchange between the calcium and sodium ions. The sodium carbonate dissolves in the water, thereby allowing the carbonate ion to react with ions that contribute to the "hardness" of water, in this case calcium ions. The ultimate result is that the calcium is exchanged for sodium to produce sodium bentonite which is preferred over calcium bentonite for applications requiring high swelling capacity in water. Depending upon the moisture content of the clay, a portion of the clay may react with the sodium carbonate on mixing without the addition of water.

Examples :

Hydrocol 2D6 - derived from calcium bentonite which is mined in southern Texas, USA  
- the calcium bentonite is dried and stored  
- the calcium bentonite is removed from storage on a conveyor and soda ash, or sodium carbonate, is added  
- the final product is composed of 4% soda ash (sodium carbonate) and 96% calcium bentonite.

File No. 2657

---

For reasons of economy, documents are printed in limited number. Delegates are kindly asked to bring their copies to meetings and not to request additional copies.

Hydrocol O - naturally occurring calcium bentonite is mixed with sodium carbonate  
- when the mixture is added to water, the sodium carbonate dissolves, and ion exchange takes place to produce sodium bentonite.

2. After a lengthy discussion, the Committee agreed to ask the SSC to consider (i) whether the term "clays" of heading 25.08 could include intermixtures of natural clays of heading 25.08 as well as mixtures of clay (e.g., bentonite) of heading 25.08 with substances of other headings (e.g. soda ash) and (ii) whether it would be feasible to distinguish, by laboratory analysis, between natural bentonite and bentonite which had been mixed with soda ash (or sodium carbonate).

## II. SECRETARIAT COMMENTS

3. The first question, i.e. question (i), concerns the scope of heading 25.08. In the Secretariat's view, this is a question of interpretation of the legal text. However, the Sub-Committee may wish to provide useful advice in this regard.
4. For example, the Sub-Committee could attempt to determine the normal range of chemical composition of natural calcium bentonite and sodium bentonite and the principal differences between the two. It could also confirm whether or not bentonite occurs as a mixture of different types of bentonite (i.e., sodium and calcium bentonites).
5. In this regard, the Secretariat would point out that Hawley's Condensed Chemical Dictionary (12th Edition) indicates that bentonite is a colloidal clay (aluminium silicate) composed chiefly of montmorillonite and that there are two varieties : (i) sodium bentonite, which has a high swelling capacity in water and (ii) calcium bentonite, which has negligible swelling capacity. It is the swelling capacity of sodium bentonite in water which makes this variety of bentonite useful for oil-well drilling fluids, cement slurries for oil-well casings and numerous other applications. As noted in paragraph 1 above, this can be done by treating calcium bentonite with soda ash and water.
6. As regards question (i), the Secretariat is of the view that the term "clay" of heading 25.08 whose scope is restricted by Note 1 to Chapter 25 would cover intermixtures of natural clays of this heading but not mixtures of clays with substances of other headings.
7. As regards question (ii), the Secretariat feels that bentonite mixed with soda ash could be distinguished from bentonite because of the presence of the added carbonate.

## III. CONCLUSIONS

8. The Sub-Committee is request to give its views on the following :
  - (a) whether the term "clays" of heading 25.08 could include intermixtures of natural clays of heading 25.08 as well as mixtures of clay (e.g., bentonite) of heading 25.08 with substances of other headings (e.g., soda ash).

- (b) whether it is feasible to distinguish, by laboratory analysis, the difference between natural sodium bentonite and sodium bentonite obtained by mixing calcium bentonite with soda ash (or sodium carbonate).
-