

**MEMORANDUM OF UNDERSTANDING FOR THE TRANSPORT OF PACKAGED  
DANGEROUS GOODS ON RO-RO SHIPS IN THE BALTIC SEA**

**Discussion on the interpretation of UN 1327 HAY, STRAW or BHUSA**  
**Submitted by Sweden**

**Executive summary:** Hay is a solid flammable in class 4.1 but at some moisture levels there is also a risk of spontaneous combustion. Spontaneous combustion is however not formally included in 4.1, since the risk of spontaneous combustion places a product in 4.2. Nevertheless, in UN 1327 some of the provisions are clearly motivated by the risk of spontaneous combustion, rather than by the flammability. The question is what risks need to be considered when classifying hay and straw? Are haylage and silage to be regarded as a type of hay and included in UN1327? What interpretations are made in the Baltic countries? Is there a need for clarification of the provisions?

**Action to be taken:** Discussion with a view to a common understanding.

**Related documents:** SWE INF 01

## **Background**

1. During the summer of 2018 the extreme heat has been causing problems in Sweden and other countries. Due to the lack of rain, Swedish farmers are desperate to find food for their animals, and many farmers are looking abroad to buy hay and silage. But there is uncertainty about how to interpret the provisions of the IMDG Code UN 1327 HAY, STRAW or BHUSA. There have been some cases where transports of hay have been stopped in port, with reference to the IMDG-requirements. It would be helpful, in these urgent circumstances, if there could be a common understanding among the participating countries on how the provisions should be understood, thus facilitating the transport of hay and other such products.
2. How should the requirements of the IMDG-code regarding UN 1327 be interpreted? Hay is classified in the dangerous goods list as a solid flammable in class 4.1, however, it is known

that there is also a risk of spontaneous combustion at some moisture levels. In particular, the risk of spontaneous combustion is increased when dried hay becomes rehydrated. But spontaneous combustion is not a risk belonging to class 4.1, but rather places a product in class 4.2.

It might be possible to classify haylage and silage as UN 1372 FIBRES ANIMAL or VEGETABLE burnt, damp or wet, which is a class 4.2. But not only would it become cumbersome to transport haylage and silage under UN 1372 - it also seems that this would override the provisions of UN 1327, which also covers hay regardless of moisture content. There is no provision in UN 1327 saying that hay needs to be below a certain moisture level in order to be regarded as "HAY". On the contrary, UN 1327 contains provisions that shows an intention to include also the types of hay that have a higher moisture content, such as haylage. It seems clear that the exception in SP 954 and the prohibition in SP 281 are provisions that have been introduced due to the risk of spontaneous combustion, rather than to the flammability.

### 3. The exception in SP 954

This provision states that very dry hay (below 14 percent moisture) may be transported without applying the IMDG-code if:

- The hay is compressed in bales,
- The bales are transported in closed cargo units, and
- There is a certificate from the shipper stating that the product does not present any class 4.1, UN 1327, hazard and showing that the moisture content is below 14 percent.

The last point is logically problematic – how can anyone say that very dry hay is not flammable? And also the second point – why closed transport units? Is it to reduce the risk of fire by ignition – or to reduce the risk of the hay getting wet (thus increasing the risk of spontaneous combustion?) Shouldn't the same exception apply for hay of any moisture content? And why is it not applicable also for straw and bhusa?

### 4. The prohibition in SP 281

When dry hay becomes rehydrated, the risk of spontaneous combustion increases radically. This is due to the moisture content in combination with the presence of air within the bale but also within the straws. The flammability of hay, on the other hand, decreases when wet. The provision must therefore be justified by the risk of spontaneous combustion.

## **Proposal**

5. Sweden proposes that the participating countries of the MoU discuss the provisions related to UN 1327, with a view to a common understanding. If the common view is that the provisions of the IMDG Code are unclear, the countries may consider requesting clarification from the UN/IMO.

## **Action to be taken**

6. The participating countries are invited to consider the proposal and take action as appropriate.