

Definition of liquids/solids

UN recommendation transport of dangerous goods

versus

European ADR transport of dangerous goods regulation

Art 1.2.1 definitions

“**Liquid**” means a substance which at 50°C has a vapour pressure of not more than 300 kPa (3 bar), which is not completely gaseous at 20°C and 101.3 kPa, and which

- (a) has a melting point or initial melting point of 20°C or less at a pressure of 101.3 kPa, or
- (b) is liquid according to the ASTM D 4359-90 test method or
- (c) is not pasty according to the criteria applicable to the test for determining fluidity (penetrometer test) described in 2.3.4;

“**Solid**” means:

- (a) a substance with a melting point or initial melting point of more than 20°C at a pressure of 101.3 kPa, or
- (b) a substance which is not liquid according to the ASTM D 4359-90 test method or which is pasty according to the criteria applicable to the test for determining fluidity (penetrometer test) described in 2.3.4;

Art 2.3.4;

Liquidity test; penetrometer test

A product is a pasta if the penetration during the test is

- a) less than 15,0 mm after 5 seconds, or
- b) more than 15,0 mm after 5 seconds but less than 20 mm after an extra 55 seconds (one minute in total).

Art 4.3.2.3.3; provision for tanks

Substances whose kinematic viscosity at 20 °C is below 2680 mm²/s shall be deemed to be liquids.

Art 6.1.3.1.d): Marking

Either the letter "S" denoting that the packaging is intended for the carriage of solids or inner packaging or, for packaging (other than combination packaging) intended to contain liquids, the hydraulic test pressure which the packaging was shown to withstand in kPa rounded down to the nearest 10 kPa.

For light-gauge metal packaging, marked with the symbol "RID/ADR, according to 6.1.3.1(a) (ii) intended to contain liquids having a viscosity at 23° C exceeding 200mm²/s, the letter "S";

Art 2.2.3

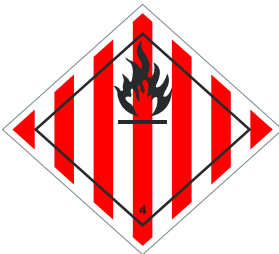
The heading of Class 3 covers substances and articles containing substances of this Class which:

- are liquids according to subparagraph (a) of the definition for "liquid" in 1.2.1;
- have at 50 °C a vapour pressure of not more than 300 kPa (3 bar) and are not completely gaseous at 20 °C and at standard pressure of 101.3 kPa; and
- have a flash-point of not more than 61 °C (see 2.3.2 for the relevant test).



Art 2.2.41

The heading of Class 4.1 covers flammable substances and articles, desensitized explosives which are solids according to subparagraph (a) of the definition "solid" in 1.2.1 and self-reactive liquids or solids.



Conclusion:

Packaging used for solids according the ADR definitions above have to be marked with the letter "S" but these packaging can only be used for substances according class 4.1; flammable solid (this is not only the case for light metal packaging)

If they are marked with label class 3 the products have to be seen as a liquids.