This Safety Advisory is directed specifically to those who classify the petroleum crude oil products.

Selecting the Proper Shipping Name

Part 2 of the Transportation of Dangerous Goods (TDG) Regulations requires the consignor (the person who ships or who imports the dangerous goods) to use the shipping name that most precisely describes the dangerous goods.

Selecting the appropriate shipping name is the first step to determine the transportation requirements applicable to a product. The shipping names that best describe petroleum crude oil are PETROLEUM CRUDE OIL (UN1267) or PETROLEUM SOUR CRUDE OIL, FLAMMABLE, TOXIC (UN3494). When additives or refined products do not affect its class and packing group, the above-mentioned shipping names continue to be the best shipping names for the product. While these shipping names may be deemed the most suitable for many crude oil types, ultimately, the most appropriate shipping name should be selected based on the results of classification testing, which may dictate an alternative more suitable shipping name.

Some requirements of the TDG Regulations apply specifically to some shipping names but may not apply to others, even within one class of dangerous goods. Special Provision 92 requiring the classification on the basis of samples and the production of a document containing information on sampling and Special Provision 106’s requirement relating to the presence of hydrogen sulphide apply to UN1267, PETROLEUM CRUDE OIL but not to UN1993, FLAMMABLE LIQUID, N.O.S.

For this reason, the shipping name FLAMMABLE LIQUID, N.O.S. (UN1993) should NOT be used for petroleum crude oil.
Classification Test Methods for Petroleum Crude Oil

Subsection 2.2(1) of the TDG Regulations requires the consignor to classify dangerous goods according to Part 2, Classification. When determining the classification of petroleum products, consignors are responsible to choose an appropriate test method, based on the scope of the method and the product itself. Before selecting a test method, the consignor must determine whether the petroleum crude oil meets the criteria for inclusion in Class 2.1, Flammable Gases, Class 3, Flammable Liquids, or any other relevant dangerous goods classes. If it meets the criteria for inclusion in Class 3, Flammable Liquids, they must use the flashpoint and initial boiling point of the product to select the proper packing group.

Note: The TDG Regulations do not specify which test method to use and the UN Recommendations provide a list of suggested test methods. These are simply suggestions and do not specify the scope of each method.

Although consignors may use ASTM D86-07a, “Standard Test Method for Distillation of Petroleum Products at Atmospheric Pressure” to determine the initial boiling point of some refined petroleum products, its scope\(^1\) makes it the wrong choice for determining the initial boiling point of petroleum crude oils containing volatile components such as methane, ethane, propane and butane.

The consignor must determine the initial boiling point using a suitable test that ensures sample integrity and minimal loss of all volatile components.

Importance of Proper Classification

The composition of petroleum products can vary greatly, which affects their properties and hazard characteristics. Incorrect classification may lead to selecting an improper means of containment and providing wrong information to First Responders.

To learn more, please contact the Transportation of Dangerous Goods Office in Ottawa by email at TDG-TMD@tc.gc.ca.

\(^1\) Specifically, the scope of ASTM D86-07a cites light and middle distillates, automotive spark-ignition engine fuels, aviation gasolines, aviation turbine fuels, 1-D and 2-D regular and low sulphur diesel fuels, special petroleum spirits, naphthas, white spirits, kerosenes, and Grades 1 and 2 burner fuels.