

Petroleum and Petrochemical Bulletin

H₂S measurement to ASTM D5705

**Bulletin 16-04
Rev. 0**

Introduction

It has come to the attention of IFIA member companies that there is some confusion around the use of test method ASTM D5705 regarding H₂S determinations. This is an important issue as, in addition to safety concerns, measurements are used to influence cargo treatment processes.

While ASTM D5705 refers to itself in the scope as a “field determination” (and it would appear that the method has evolved from a previous process whereby a sample was introduced into a sample can, at the sample point, immediately shaken and the vapor phase tested using a Draeger tube) it is a laboratory method. Section 9.2 covers delivery of the samples to the testing facility and several steps within the procedure require the use of laboratory equipment.

Sampling Requirements

Recommended sampling follows normal practice for the sampling of storage tanks, ships, or barges; additionally:

- Samples are dedicated to a **single H₂S determination** and not for any other testing.
- Spot samples are to be taken from the **midpoint, or below**, of the fuel oil. Samples taken well into the fuel oil are stated to have less H₂S loss from degassing as compared with those from the surface.
- At least two 1 litre (1 quart) containers are to be filled.
- Sample container **headspace is to be minimized** (liquid full).
- Samples are to be **capped immediately** and delivered to the testing facility.
- Samples are to be **tested within four hours**.
- Samples **cannot be stored** for later testing.

Summary

IFIA member companies wish to point out that this method is a laboratory determination, which requires samples to be transported to a laboratory for testing.

IFIA members feel that the transportation of “liquid full” sample containers presents a serious safety risk and in this regard, IFIA members wish to advise that they will diverge from the method and, instead, rely upon standards which allow a maximum fill capacity of 90-95%.

Note: Attention is also drawn to IFIA Bulletin 12-02 (Rev. 0) – Bunker Sampling for H₂S.

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Revisions/Reaffirmations

Rev. 0 November 2016