Safe Operation of Hydrofluoric Acid Alkylation Units

API RECOMMENDED PRACTICE 751
SIXTH EDITION, OCTOBER 2026



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Safe Operation of Hydrofluoric Acid Alkylation Units

1 Scope

This recommended practice provides requirements (shall) and recommendations (should) for practices and procedures related to safety, operations, design, inspection, and maintenance to support the safe and reliable operation of hydrofluoric acid (HF) alkylation units. Topics include hazard management; operating procedures and worker protection; materials, construction, inspection, and work practices; transportation and inventory control; pressure-relief, product treatment, and utility systems; and risk mitigation. This document contains requirements and recommendations that have been found effective based on broad industry acceptance, proven effective industry practices, testing, and regulatory requirements.

2 Normative References

The following documents are referred to in the text in such a way that some or all of their content constitutes the requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

API Standard 510, *Pressure Vessel Inspection Code: In-service Inspection, Rating, Repair, and Alteration*

API 570, *Piping Inspection Code: In-service Inspection, Rating, Repair, and Alteration of Piping Systems*

API Standard 653, *Tank Inspection, Repair, Alteration, and Reconstruction*

NOTE Whenever API standards are referenced, where equivalent national standards exist, they may be used in accordance with other applicable regulations for non-U.S. jurisdictions.

3 Terms, Definitions, Acronyms, and Abbreviations

3.1 Terms and Definitions

For the purposes of this document, the following terms and definitions apply.

3.1.1
acid detecting paint
A durable, industrial coating with a unique acid-sensitive component which changes color (e.g., golden yellow to brilliant red) when exposed to an acid or acid vapor of pH 3 or lower. (Also known as acid indicating paint.)

3.1.2
acid relief neutralizer
ARN
System that routes the flow from acid-containing relief valves so that the acid is neutralized before being routed to the non-acid flare system. Vapor flow is typically routed to the general refinery flare header once neutralized. This can also refer to a flare gas scrubber (FGS) or a relief gas scrubber (RGS).