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Petroleum, petrochemical and natural gas industries — Metallic materials resistant to sulfide stress cracking in corrosive petroleum refining environments

AS ISO 17945:2022

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Australian Industry Group
Australian Organisation for Quality
Australian Petroleum Production and Exploration Association
Australian Pipelines and Gas Association
Department for Energy and Mining, SA
Department of Mines, Industry Regulation and Safety, WA
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Preface

This Standard was prepared by the Standards Australia Committee ME-092, Materials, equipment, structures and related services for petroleum, petrochemical and natural gas industries.

The objective of this document is to establish material requirements for resistance to sulfide stress cracking (SSC) in sour petroleum refining and related processing environments containing H_2S either as a gas or dissolved in an aqueous (liquid water) phase with or without the presence of hydrocarbon.

This document does not include and is not intended to include design specifications. Other forms of wet H_2S cracking, environmental cracking, corrosion, and other modes of failure are outside the scope of this document. It is intended to be used by refiners, equipment manufacturers, engineering contractors, and construction contractors.

This document is directed at the prevention of SSC of equipment (including pressure vessels, heat exchangers, piping, valve bodies, and pump and compressor cases) and components used in the refining industry. Prevention of SSC in carbon steel categorized under P-No. 1 in Section IX of the ASME Boiler and Pressure Vessel Code (BPVC) is addressed by requiring conformance with NACE SP0472.

This document applies to all components of equipment exposed to sour refinery environments (see Clause 6) w

(a) compromise the integrity of the pressure-containment system;

(b) prevent the basic function of the equipment; and/or

(c) prevent the equipment from being restored to an operating condition while continuing to contain pressure.

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Foreword

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The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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The committee responsible for this document is ISO/TC 67, *Materials, equipment and offshore structures for petroleum, petrochemical and natural gas industries*.