What is NACE?
NACE International, formerly known as National Association of Corrosion Engineers, is a world wide corrosion society. NACE International provides and publishes standards such as the MR0175 and the MR0103. In these standards, NACE International provides guidance on which corrosion resistant alloys and materials should be used for preventing sulfide stress cracking. These guidelines are determined from the collection of laboratory experimental data and field experience related to cracking resistance of metallic materials in a hydrogen sulfide (H₂S) containing environment. In the NACE International standards, a H₂S containing environment may also be recognized as a “sour gas environment."

NACE MR0175 and MR0103 Standards
The NACE MR0175 standard, also known as ISO15156 (International Standard), was developed for the prevention of sulfide stress cracking due to H₂S in oil and gas production systems. Historically, for the refining process, the MR0175 standard was used as a guideline for choosing suitable materials. However, the refining process environment is outside of the scope of the MR0175 standard. The NACE MR0103 standard was developed to be a refinery-specific sour service materials standard. Like the MR0175 standard, the MR0103 standard provides recommendations on which alloys and materials to use to prevent sulfide stress cracking in an H₂S containing environment.

WIKA Factory Approved Pressure Gauges for NACE
For prevention of sulfide stress cracking in H₂S containing oil and gas production systems and refinery process environments, WIKA offers several pressure gauges that meet NACE recommendations. These pressure gauges are separated into two main NACE recommended materials listed below.

316L Stainless Steel
For sour gas services, WIKA offers pressure gauges with 316L stainless steel alloy wetted parts. However, not all standard WIKA 316L stainless steel gauges are factory-approved for use in a sour gas service application. The instrument must be ordered and manufactured specifically for NACE sour gas service. Pressure gauges manufactured according to NACE MR0175 and NACE MR0103 will have “NACE – Sour Gas Service” printed on the dial and a NACE certificate of compliance to EN 10 204 – 2.2 will be available upon request. The available WIKA factory-approved 316L stainless steel alloy pressure gauge models are:

- 23X.53 in the 2.5” and 4” sizes
- 23X.54 in the 2.5” and 4” sizes
- 23X.30 in the 2.5”, 4”, 4.5” and 6” sizes
- 23X.50 in the 2.5”, 4”, 4.5” and 6” sizes
- 23X.34 in the 4.5” and 6” sizes

Monel
All WIKA pressure gauges with Monel wetted parts are factory-approved for use in a sour gas service. A Monel wetted parts gauge will have “Monel” printed on the dial and is compliant to both the MR0175 and the MR0103. When ordered specifically for NACE MR0175 and MR0103, “NACE – Sour Gas Service” will be imprinted on the dial face. Upon request, a NACE certificate of compliance to EN 10 204 – 2.2 may be issued for a Monel wetted parts gauge at no extra cost. The available WIKA factory-approved Monel pressure gauge models are:

- 26X.30 in the 2.5”, 4”, 4.5” and 6” sizes
- 26X.50 in the 2.5”, 4”, 4.5” and 6” sizes
- 26X.34 in the 4.5” and 6” sizes

Each wetted parts material listed above can be successfully utilized for NACE service when applied in accordance with the guidelines and recommendations set forth in NACE MR0175 and MR0103. It is the ultimate responsibility of the end user to interpret these documents and determine if the above listed materials are suitable for their particular application.

Please contact your WIKA customer service representative for pricing and availability for Monel and 316L SS alloy factory-approved pressure gauges for use in sour gas services.