

氢致开裂试验HIC试验

产品名称	氢致开裂试验HIC试验
公司名称	江苏正盛特种设备材料技术检验有限公司
价格	2800.00/组
规格参数	型号:L245NS 产地:江苏 周期:96H
公司地址	无锡市北塘区光电新材料科技园会北路28-153号
联系电话	0510-88300137 18021193292

产品详情

二、试验方法

. Test Method

2.1 试验按NACE TM0284-2003 “ Evaluation of Pipeline and Pressure Vessel Steels for Resistance to Hydrogen-Induced Cracking ” 执行。

2.1 The test is conducted according to NACE TM0284-2003 “ Evaluation of Pipeline and Pressure Vessel Steels for Resistance to Hydrogen-Induced Cracking ” .

2.2 试验溶液为A溶液，即5%NaCl+0.5%CH₃COOH+饱和硫化氢水溶液。

2.2 The testing solution is solution A, which is consisted of 5.0 wt% sodium chloride and 0.5 wt% glacial acetic acid and saturated H₂S aqueous solution.

三、试验步骤

. Test Procedure

3.1 参照标准要求制备试样。

3.1 Prepared the specimens in accordance with the standard requirements.

3.2 用蒸馏水和分析纯级化学药品配制成本次试验的试验溶液。

3.2 Prepared the test solution with distilled water and analytically pure agents.

3.3 试验前，试样用肥皂水脱脂，然后用酒精清洗。将处理（除油、打磨）好的试样装夹在专用的有机玻璃试样架上，放入试验容器中，待溶液注入试验容器后将容器密封。

3.3 Prior to testing, degrease the test samples with soap water and rinse with alcohol. Put the prepared (ground and oil removed) samples on the special organic glass rack, put them in the test container, inject test solution into the container and then seal it.

3.4 试验压力为常压，试验温度为 25 ± 3 。

3.4 Test pressure is atmospheric pressure and test temperature is 25 ± 3 .

3.5 以每分钟每升溶液100mL的速度通入氮气1h脱氧。所用N₂的气体纯度为99.9%以上。pH=2.7。

3.5 The solution shall be deaerated by bubbling nitrogen at a rate of 100 mL per minute, per liter of test solution for 1 hour. The N₂ gas purity shall be 99.9 vol% or better. And the initial pH is 2.7.

3.6 关闭N₂，以每分钟每升溶液200mL的速度通入H₂S气体1小时。H₂S纯度为99.5% vol。然后保持H₂S气体为正压，持续96小时。

3.6 The solution shall then be saturated by bubbling H₂S at a rate of 200 mL per minute, per liter of test solution for the first 60 minutes. The purity of H₂S is 99.5% vol. Thereafter, maintained a positive pressure of H₂S for 96 hours.

3.7 通气完毕，取出试样在流水中清洗，并用酒精清洗，在冷风中吹干。

3.7 Upon completion of aeration, the samples shall be removed from the solution and cleaned in flowing water. The samples shall be dried in cold air after being immersed in ethyl alcohol.

3.8 按标准切割试样并进行金相观察。

3.8 Cut samples and make metallographic examinations according to the standards.

四、试验结果

.Test Results

对于0.5% CH₃COOH +5%NaCl+饱和硫化氢水溶液，起始时试验溶液的pH测试值为3.2，试验后溶液的pH测试值为3.6。

按试验标准的要求放大100×对断面进行检查，评定试板的裂纹敏感率（CSR）、裂纹长度敏感率（CLR）、裂纹厚度敏感率（CTR）。试验结果见表1和图1。

For 5%NaCl+0.5% CH₃COOH solution saturated with H₂S gas, the initial pH value is 3.2 and the final pH value is 3.6.

According to the requirements of the standard, all the cross sections are checked on by 100× magnification. The Crack Sensitivity Ratio (CSR), the Crack Length Ratio (CLR) and the Crack Thickness Ratio (CTR) are evaluated. The results are shown in Table 1 and Fig. 1.