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Replacing SH 3403-1996

**Metallic Ring Joint Gaskets for Steel Pipe Flanges in
Petrochemical Industry**

石油化工钢制管法兰用金属环垫

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Table of Contents

Foreword.....	3
1 Scope.....	5
2 Normative References.....	5
3 General Requirements.....	6
3.1 Metallic ring joint gasket types.....	6
3.2 Nominal pressure and nominal diameter	6
3.3 Ring No.....	6
4 Gasket Types, Dimensions and Tolerances	7
4.1 Gasket types.....	7
4.2 Gasket dimensions and tolerances	8
5 Technical Conditions.....	11
5.1 Material.....	11
5.2 Fabrication requirements	12
6 Examination and Test.....	12
6.1 Examination.....	12
6.2 Test.....	12
7 Product Quality Certificate	12
8 Marking, Tag, Protection and Packing.....	13
8.1 Marking and tag.....	13
8.2 Protection and packing.....	14
Explanation of Wording in this Standard.....	15

Foreword

According to the requirements of *The First Batch of Industry Standards Formulation and Revision Plan in 2010* (GXTK [2010] No. 74) issued by the Ministry of Industry and Information Technology of the People's Republic of China's, the standard preparation team revised this Standard through conducting extensive research and carefully summarizing practical experience, referring to relevant international standards and foreign advanced standards, and basing on extensive solicitation of opinions.

This Standard was totally divided into 8 clauses.

The major technical contents of this Standard include: Types, dimensions and tolerances, technical conditions, examination and test, etc. of metallic ring joint gasket for steel pipe flanges,

This Standard was revised on the basis of SH 3403-1996 *Metallic ring joint gaskets for pipe flanges*. The major revised technical contents are as follows:

- Modify the standard name into *Metallic Ring Joint Gaskets for Steel Pipe Flanges in Petrochemical Industry*;
- Revise the Normative References;
- Update the original nominal pressure expression method; and add a comparison list of the Class expression method;
- Add the dimensions of gaskets for A series flanges with nominal diameter $DN600$ or above;
- Supplement the content of examination and test.

This Standard is managed by China Petrochemical Corporation; the Piping Design Technology Center Station of China Petrochemical Corporation is responsible for daily management; and Sinopec Engineering Incorporation is responsible for the interpretation of specific technical contents. If there are any comments or suggestions during the implementation process, please send them to the management organization and chief drafting organization.

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Metallic Ring Joint Gaskets for Steel Pipe Flanges in Petrochemical Industry

1 Scope

This Standard specifies the requirements for the type, size and tolerance, technical conditions, examination and test of metallic ring joint gaskets for steel pipe flanges in petrochemical industry.

This Standard is applicable to the manufacture and acceptance of metallic ring joint gaskets for grooved-surface steel pipe flanges with nominal pressures *PN*20 (Class 150) ~ *PN*420 (Class 2500) specified in SH/T 3406 *Steel Pipe Flanges for Petrochemical Industry*.

2 Normative References

The following documents are essential to the application of this Document. For the dated documents, only the versions with the dates indicated are applicable to this Document; for the undated documents, only the latest version (including all the amendments) is applicable to this Document.

- GB/T 222 Permissible tolerances for chemical composition of steel products
- GB/T 230.1 Metallic materials – Rockwell hardness test – Part 1: Test method
- GB/T 231.1 Metallic materials – Brinell hardness test – Part 1: Test method
- GB/T 699 Quality carbon structural steels
- GB/T 1220 Stainless steel bars
- NB/T 47008 Carbon and alloy steel forgings for pressure equipment
- NB/T 47010 Stainless and heat-resisting steel forgings for pressure equipment
- SH/T 3406 Steel pipe flanges for petrochemical industry

5.2 Fabrication requirements

5.2.1 The metallic ring joint gasket is made of forging and machining. The forged blank shall meet the requirements of Level-II forgings specified in NB/T 47008 or NB/T 47010. Tailor welding is not allowed for metallic ring joint gaskets.

5.2.2 The sealing surface roughness of the metal ring joint gasket shall be less than or equal to $R_a1.6$.

6 Examination and Test

6.1 Examination

6.1.1 The metallic ring joint gasket shall be visually examined piece by piece. The sealing surface of the metallic ring joint gasket shall not have scratches, dents, cracks, spots and other defects.

6.1.2 The dimensions of the metallic ring joint gasket shall be examined piece by piece and shall comply with the provisions of Clause 4 in this Standard.

6.1.3 If the users have any other examination requirements, which shall be noted in the contract.

6.2 Test

6.2.1 The blank hardness shall be tested according to the relevant provisions of GB/T 231.1.

6.2.2 The product hardness shall be tested according to the relevant provisions of GB/T 230.1. The average hardness measured at four symmetrical points around the entire circumference shall comply with the provisions of Table 5.1.2 in this standard.

7 Product Quality Certificate

7.1 The metallic ring joint gaskets manufactured according to this Standard shall be accompanied by product quality certificate for each batch.

7.2 The product quality certificate shall include the following contents:

- a) Name of manufacturer and date of manufacture;
- b) Stamp of the Manufacturer's Technical (Quality) Inspection Department;
- c) Signature of quality inspector and date of inspection;
- d) Product name, specification, material, and material standard;

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