

VANADIUM PENTOXIDE CATALYST TECHNICAL SPECIFICATIONS

ARTICLE 1. SUBJECT OF WORK

1.1. Vanadium Pentoxide Catalyst will be purchased for the need of Bandırma Boron and Acid Works of Eti Mine Works General Management will be purchased.

1.2. Eti Mine Works General Management will be referred as the “**ENTITY**”, Bandırma Boron and Acid Works will be referred as the “**PLANT MANAGEMENT**”, the bidding firms will be referred to as the “**BIDDER**” and the successful bidder of the tender will be referred to as the “**CONTRACTOR**” hereinunder.

ARTICLE 2. REQUIRED QUANTITY

100.000 liters of Vanadium Pentoxide catalyst will be purchased.

ARTICLE 3. BID SCOPE AND REQUIRED CHARACTERISTICS

Catalyst will be used for 1st, 2nd & 3rd & 4th Bed.

Starting temperature for SO₂ turning to SO₃ : 360 °C (or a lower value) Operation
Temperature Range : 400-630 °C
Thermal Stability : Thermal stability must be protected up to 630°C in continuous operation.
Outer diameter : 11-13 mm
Inner diameter : 3-5 mm
Length : 10-20 mm
Bulk density : 0,4-0,6 kg/dm³
Vanadium Pentoxide (V₂O₅) : 6-8 %
Potassium Oxide (K₂O) : 9-10.75 %
Sodium Oxide (Na₂O) : 1-2 %

* Catalyst will be saturated with SO₂ containing gas.

ARTICLE 4. WORK ENVIRONMENT AND CONDITIONS

4.1. Work Environment: Purchased catalyst will be used for completion of the losses resulting from sieving at the existing catalysts at all beds of the converter unit.

ARTICLE 5. WORK COMMENCEMENT DATE, DELIVERY TERM, DELIVERY PLACE AND CONDITIONS

5.1. Work commencement date:

5.1.1. Inland: The work commencement date is the contract signing date.

5.1.2. Abroad: The work commencement date is the contract signing date.

5.2. Delivery period: 180 (hundred and eighty) calendar days subsequent to work commencement date.

5.3. Delivery Place and Conditions

5.3.1. Inland: Place of delivery will be Bandırma Boron and Acid Works with all costs related shipping and insurance being to the account of the Contractor.

5.3.2. Abroad: Delivery will be on CPT/CFR Istanbul basis.

ARTICLE 6. REQUIRED DOCUMENTS, INFORMATION AND SAMPLE

Bidders will present a document that the chemical characteristics (V_2O_5 , K_2O , Na_2O) and the physical characteristics of the material specified in Article 3 are guaranteed. Document showing the production date, production place and service life of the catalyst and material safety datasheets of the material will be presented in English and Turkish to the Plant Management/Entity at the delivery phase of the material.

ARTICLE 7. BID AND PAYMENT CONDITIONS:

7.1. Bid and Payment Conditions:

7.1.1. Inland: Bids will be presented in TL/USD/EURO.

7.1.2. Abroad: Bids will be presented in USD/EURO.

7.2. Partial Bids: Bids shall be presented for the complete work in this tender.

7.3. Advance Payment: Advance payment will not be made for this work.

7.4. Performance Guarantee: Performance guarantee will not be required.

7.5. Elements other than Price: Elements other than price will not be taken into consideration in the bids.

ARTICLE 8. INSTALLATION, TEST, STARTUP AND PERFORMANCE TESTS

This article is left blank.

ARTICLE 9. ACCEPTANCE PROCESSES

In the delivery of the material, products that are found not to comply with the technical specification will not be accepted. The materials determined by *Entity* to be unsuitable will be notified to the Contractor in writing and the Contractor will replace the unsuitable materials with *suitable* new ones and the Contractor will be given 60 calendar days for the said replacement, with delay penalty, and all costs incurred for the said exchange transactions (for foreign purchases; expenses excluding VAT that will occur at the import customs, expenses that will occur at the import and export customs, transportation, insurance, packaging) will be covered by the Contractor under the same contract terms.

ARTICLE 10. WARRANTY

This article is left blank.

ARTICLE 11. FINES

11.1. Inland: In the event of failure in delivery of the goods in the specified period pursuant to the contract, the delay fines specified in the contract will be applied.

11.2. Abroad: The fines shall be applied pursuant to the provision specified in the administrative specification concerning with late and/or unsuitable deliveries.

ARTICLE 12. OTHER ISSUES

- **Packaging:** Catalysts will be packed in air-tight two hundred liter drums, in original packaging without being exposed to external factors (moisture etc) so as to maintain its condition for a long period of time.

ARTICLE 13. ARTICLES OF THE TECHNICAL SPECIFICATIONS

This technical specification consists of 13 (thirteen) articles, including this article.

Prepared by:

Göksel ÇAVUŞ
Process Engineer

21 December 2021