



Quality Assurance Laboratory

Format No. : QA/660
 Rev No. : 000

Certified Report

| | |
|----------------|---|
| DATE | 24-05-2016 |
| CLIENT | V/O "TYAZPROMEXPORT" JSC, |
| PRODUCT | CXO-12(MP)(H+) |
| SALES ORDER NO | |
| IONIC FORM | HYDROGEN |
| TYPE | MACROPOROUS WEAK ACID CATION EXCHANGE RESIN |

| PARAMETER | SPECIFICATION | BATCH NOS | | | | |
|--|-----------------|-----------------|----------|----------|----------|----------|
| | | # 211319 | # 211320 | # 211321 | # 211322 | # 211323 |
| TOTAL EXCHANGE CAPACITY (MEQ/ML) | MIN 4.1 MEQ/ML | 4.12 | 4.16 | 4.14 | 4.19 | 4.2 |
| MOISTURE CONTENT | 44 % - 50 % | 46.33 | 48.92 | 46.1 | 48.38 | 48.38 |
| CRACKED & BROKEN BEADS % | 5 % MAX | 1 | 1 | 1 | 1 | 1 |
| PARTICLE SIZE (0.3 TO 1.2 MM) | (0.3 TO 1.2 MM) | (0.3 TO 1.2 MM) | | | | |
| VOLUME OF WORKING FRACTION % | 95 % MIN | 98.52 | 98.9 | 99.21 | 98.14 | 97.76 |
| EFFECTIVE SIZE | 0.45 – 0.55 MM | 0.46 | 0.45 | 0.48 | 0.47 | 0.45 |
| UNIFORMITY COEFFICIENT | 1.7 MAX | 1.50 | 1.53 | 1.52 | 1.60 | 1.60 |
| Reversible Swelling, H ⁺ →Na ⁺ , % | 70 | 70 | 70 | 70 | 70 | 70 |
| Backwash settled density, g/l | 750-790 | 760 | 777 | 768 | 759 | 785 |
| Shipping density, g/l | 750 | 750 | 750 | 750 | 750 | 750 |
| Maximum operation temperature, °C | 100 | 100 | 100 | 100 | 100 | 100 |

M.B. Dastore

**Q.A. INCHARGE
 THERMAX LIMITED**

HEAD OFFICE : THERMAX LIMITED 97-E ,BHOSARI INDUSTRIAL AREA,PUNE 411026,INDIA.
 REGD OFFICE : D – 13 , MIDC INDUSTRIAL AREA, CHINCHWAD , PUNE – 411 019 , INDIA.
 CORPORATE IDENTITY NUMBER :L29299PN1980PLC022787.



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| IONIC FORM | HYDROGEN |
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| PARAMETER | SPECIFICATION | BATCH NOS | | | | |
|--|-----------------|-----------------|----------|----------|----------|----------|
| | | # 211324 | # 211325 | # 211326 | # 211327 | # 211328 |
| TOTAL EXCHANGE CAPACITY (MEQ/ML) | MIN 4.1 MEQ/ML | 4.14 | 4.12 | 4.12 | 4.12 | 4.13 |
| MOISTURE CONTENT | 44 % - 50 % | 46.92 | 44.1 | 45.7 | 45.89 | 45.9 |
| CRACKED & BROKEN BEADS % | 5 % MAX | 1 | 1 | 1 | 1 | 1 |
| PARTICAL SIZE (0.3 TO 1.2 MM) | (0.3 TO 1.2 MM) | (0.3 TO 1.2 MM) | | | | |
| VOLUME OF WORKING FRACTION % | 95 % MIN | 95.46 | 98.6 | 96.00 | 96.47 | 95.8 |
| EFFECTIVE SIZE | 0.45 – 0.55 MM | 0.45 | 0.49 | 0.48 | 0.47 | 0.45 |
| UNIFORMITY COEFFICIENT | 1.7 MAX | 1.52 | 1.56 | 1.56 | 1.53 | 1.55 |
| Reversible Swelling, H ⁺ →Na ⁺ , % | 70 | 70 | 70 | 70 | 70 | 70 |
| Backwash settled density, g/l | 750-790 | 787 | 773 | 779 | 753 | 768 |
| Shipping density, g/l | 750 | 750 | 750 | 750 | 750 | 750 |
| Maximum operation temperature, °C | 100 | 100 | 100 | 100 | 100 | 100 |

M.B. Dabole

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| IONIC FORM | HYDROGEN |
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| PARAMETER | SPECIFICATION | BATCH NOS | | | | |
|--|-----------------|-----------------|----------|----------|----------|----------|
| | | # 211330 | # 211331 | # 211332 | # 211333 | # 211334 |
| TOTAL EXCHANGE CAPACITY (MEQ/ML) | MIN 4.1 MEQ/ML | 4.12 | 4.12 | 4.14 | 4.16 | 4.12 |
| MOISTURE CONTENT | 44 % - 50 % | 48.12 | 46.9 | 47.5 | 45.9 | 46.1 |
| CRACKED & BROKEN BEADS % | 5 % MAX | 1 | 1 | 1 | 1 | 1 |
| PARTICAL SIZE (0.3 TO 1.2 MM) | (0.3 TO 1.2 MM) | (0.3 TO 1.2 MM) | | | | |
| VOLUME OF WORKING FRACTION % | 95 % MIN | 97.26 | 96.1 | 96.8 | 95.9 | 97.2 |
| EFFECTIVE SIZE | 0.45 – 0.55 MM | 0.48 | 0.45 | 0.46 | 0.45 | 0.47 |
| UNIFORMITY COEFFICIENT | 1.7 MAX | 1.65 | 1.58 | 1.57 | 1.60 | 1.57 |
| Reversible Swelling, H ⁺ →Na ⁺ , % | 70 | 70 | 70 | 70 | 70 | 70 |
| Backwash settled density, g/l | 750-790 | 763 | 783 | 755 | 772 | 761 |
| Shipping density, g/l | 750 | 750 | 750 | 750 | 750 | 750 |
| Maximum operation temperature, °C | 100 | 100 | 100 | 100 | 100 | 100 |

M.B. Dasare

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