

# C E R T I F I C A T E   O F   A N A L Y S I S

## BASELINE Hydrofluoric Acid

|               |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                     |              |              |               |              |             |              |              |                |                      |              |               |              |    |    |  |  |  |  |             |  |  |  |  |  |  |  |  |  |  |  |  |
|---------------|--------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|--------------|--------------|---------------|--------------|-------------|--------------|--------------|----------------|----------------------|--------------|---------------|--------------|----|----|--|--|--|--|-------------|--|--|--|--|--|--|--|--|--|--|--|--|
| 1A            |              | PRODUCT NUMBER: 05                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                     |              |              |               |              |             |              |              |                | LOT NUMBER : 5201063 |              |               |              |    |    |  |  |  |  | ASSAY : 50% |  |  |  |  |  |  |  |  |  |  |  |  |
| 2A            |              | <p>Most elements are determined by magnetic sector ICP-MS using sample preconcentration. The results are an average of three aliquots subsampled from three samples representative of the lot. The samples are slowly evaporated to dryness, the resulting residue is reconstituted in a small volume of 2% SEASTAR™ BASELINE® Nitric Acid. Operations are conducted under Class 100 or better clean-room conditions. For volatile elements (indicated by *), the acid samples are diluted then directly injected into the ICP-MS. Values below 3 times the standard deviation of the blank are shown with "&lt;", no blank value is</p> |                                                     |              |              |               |              |             |              |              |                | 3A                   |              | 4A            | 5A           | 6A | 7A |  |  |  |  |             |  |  |  |  |  |  |  |  |  |  |  |  |
| 3 Li<br><1    | 4 Be<br><5   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                     |              |              |               |              |             |              |              |                | 5 B<br><50           |              |               |              |    |    |  |  |  |  |             |  |  |  |  |  |  |  |  |  |  |  |  |
| 11 Na<br><10  | 12 Mg<br><10 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                     |              |              |               |              |             |              |              |                | 13 Al<br><30         |              |               |              |    |    |  |  |  |  |             |  |  |  |  |  |  |  |  |  |  |  |  |
|               |              | 3B                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 4B                                                  | 5B           | 6B           | 7B            | 8            |             | 1B           | 2B           |                |                      |              |               |              |    |    |  |  |  |  |             |  |  |  |  |  |  |  |  |  |  |  |  |
| 19 K<br><10   | 20 Ca<br><20 | 21 Sc<br><1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 22 Ti<br><30                                        | 23 V<br><1   | 24 Cr<br><10 | 25 Mn<br><1   | 26 Fe<br><20 | 27 Co<br><1 | 28 Ni<br><10 | 29 Cu<br><5  | 30 Zn<br><5    | 31 Ga<br><1          | 32 Ge<br><1  | 33 As<br><10  | 34 Se<br><50 |    |    |  |  |  |  |             |  |  |  |  |  |  |  |  |  |  |  |  |
| 37 Rb<br><1   | 38 Sr<br><1  | 39 Y<br><0.5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 40 Zr<br><10                                        | 41 Nb<br><5  | 42 Mo<br><5  |               | 44 Ru<br><1  | 45 Rh<br><1 | 46 Pd<br><10 | 47 Ag<br><1  | 48 Cd<br><0.1  | 49 In<br><0.1        | 50 Sn<br><10 | 51 Sb<br><10  | 52 Te<br><10 |    |    |  |  |  |  |             |  |  |  |  |  |  |  |  |  |  |  |  |
| 55 Cs<br><0.5 | 56 Ba<br><5  | 57 La<br><0.1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 72 Hf<br><1                                         | 73 Ta<br><20 | 74 W<br><20  | 75 Re<br><0.1 |              |             | 78 Pt<br><10 | 79 Au<br><10 | 80 *Hg<br><100 | 81 Tl<br><0.1        | 82 Pb<br><1  | 83 Bi<br><0.1 |              |    |    |  |  |  |  |             |  |  |  |  |  |  |  |  |  |  |  |  |
|               |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | ALL VALUES ARE REPORTED IN PARTS PER TRILLION (PPT) |              |              |               |              |             |              |              |                |                      |              |               |              |    |    |  |  |  |  |             |  |  |  |  |  |  |  |  |  |  |  |  |

ALL VALUES ARE REPORTED IN PARTS PER TRILLION (PPT)

### KEY

|         |                                 |
|---------|---------------------------------|
| (1) (2) | (1) Atomic Number               |
| (3)     | (2) Elemental Symbol            |
| (4)     | (3) Concentration (mean in ppt) |
|         | (4) 1 Standard Deviation n=3)   |

|      |    |      |    |      |    |  |      |    |      |    |      |    |      |    |      |    |      |    |      |    |      |    |      |    |      |    |
|------|----|------|----|------|----|--|------|----|------|----|------|----|------|----|------|----|------|----|------|----|------|----|------|----|------|----|
| 58   | Ce | 59   | Pr | 60   | Nd |  | 62   | Sm | 63   | Eu | 64   | Gd | 65   | Tb | 66   | Dy | 67   | Ho | 68   | Er | 69   | Tm | 70   | Yb | 71   | Lu |
| <0.1 |    | <0.1 |    | <0.1 |    |  | <0.1 |    | <0.1 |    | <0.1 |    | <0.1 |    | <0.1 |    | <0.1 |    | <0.1 |    | <0.1 |    | <0.1 |    | <0.1 |    |
| 90   | Th |      |    | 92   | U  |  |      |    |      |    |      |    |      |    |      |    |      |    |      |    |      |    |      |    |      |    |
| <0.1 |    |      |    | <0.1 |    |  |      |    |      |    |      |    |      |    |      |    |      |    |      |    |      |    |      |    |      |    |



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