

Atomic Absorption Spectrophotometers

# AA-6200 Series Consumables



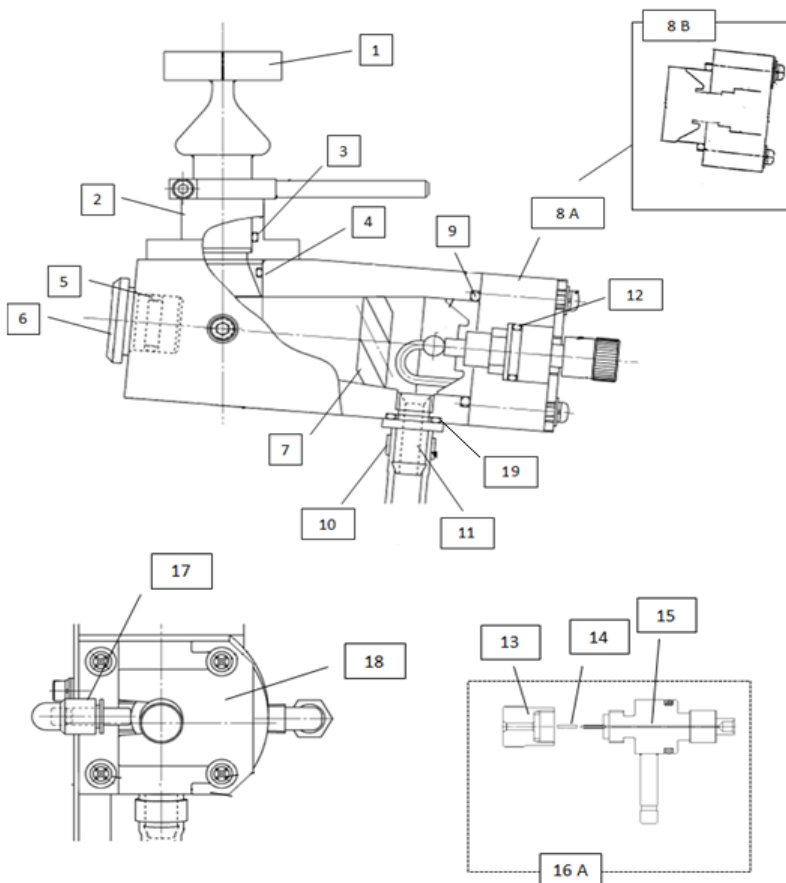
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# AA-6200

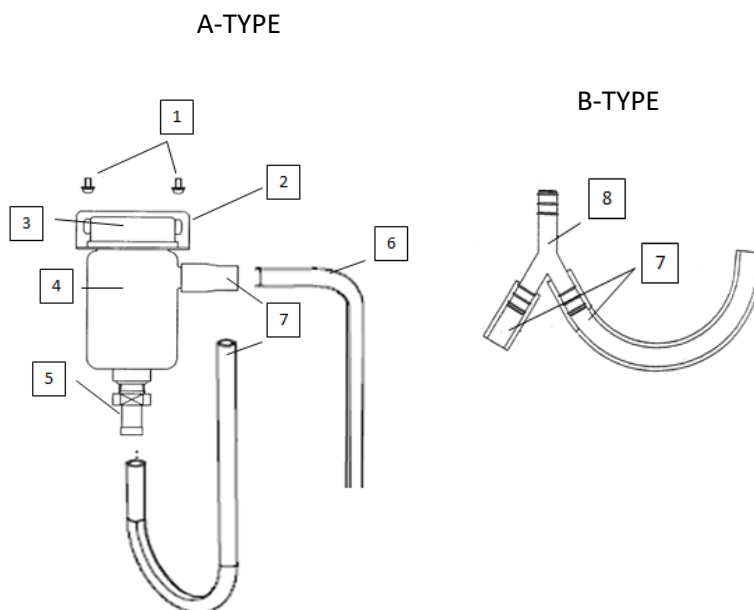
## Burner ASSY



| Item | Part Number  | Part Name                        |
|------|--------------|----------------------------------|
| 1    | 206-50370-91 | 10 cm TITANIUM BURNER HEAD       |
| 2    | 206-50179-00 | BURNER SOCKECT                   |
| 3    | 036-15551-16 | O-RING, AS568-11640              |
| 4    | 036-11222-84 | O-Ring, 4D P22                   |
| 5    | 036-11217-00 | O-RING 4D P16                    |
| 6    | 206-50123-00 | PLUG FOR CHAMBER ASSY AA         |
| 7    | 206-50486-00 | PADDLE MIXER                     |
| 8A   | 206-50362-92 | JACKET, FIXED BEAD (new style)   |
| 8B   | 206-50362-91 | JACKET, MOVABLE BEAD (old style) |
| 9    | 036-11237-00 | O-RING 4D P35                    |
| 10   | 072-60315-01 | WIRING BAND                      |
| 11   | 206-52702-91 | JOINT DRAIN                      |
| 12   | 036-11203-00 | O-Ring, 4D P5                    |
| 13   | 206-50321-00 | CAP                              |
| 14   | 200-31328-01 | TUBING POLYETHYLENE              |
| 15   | 206-50230-91 | CAPILLARY                        |
| 16A  | 206-52300-91 | NEBULIZER ASSY                   |
| 17   | 035-65268-02 | ELBOW                            |
| 18   | 206-51389-00 | RETAINTING PLATE                 |
| 19   | 036-11215-84 | O-RING 4D P14                    |

## Drain ASSY

| Item | Part Number  | Part Name           |
|------|--------------|---------------------|
| 1    | 020-46534-00 | SCREW, M3 X 6       |
| 2    | 206-80448-00 | BOTTLE HOLDER       |
| 3    | 201-48255-00 | POLY-CAP 33PHI      |
| 4    | 206-63698-00 | DRAIN BOTTLE        |
| 5    | 206-50747-00 | JOINT, AA           |
| 6    | 016-43201-02 | DRAIN TUBE          |
| 7    | 016-35792-09 | U-SHAPE, DRAIN TRAP |
| 8    | 035-61561-04 | Y - JOINT           |

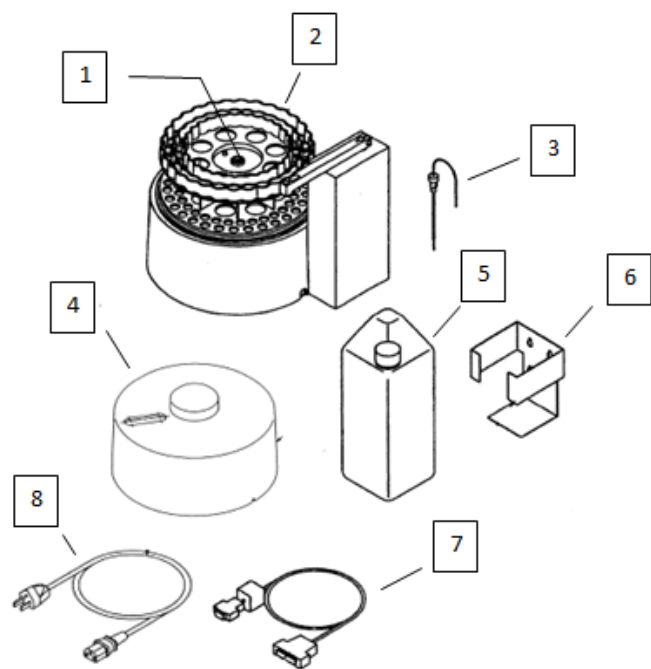


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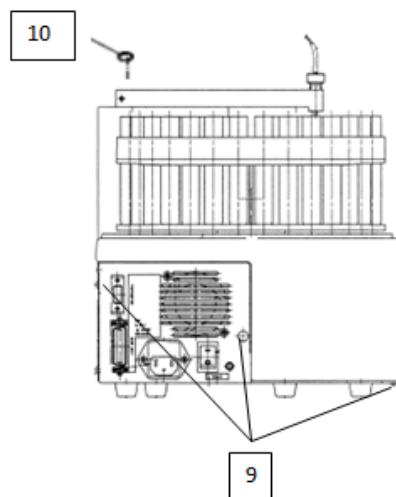
## Maintenance Parts: AA-6200

|             | <b>Part Name</b>            | <b>Part Number</b> | <b>Remarks</b>  | <b>Replacement</b>                           |
|-------------|-----------------------------|--------------------|---|--|
| D2-Lamp     | Lamp, D2 L6380              | 062-65055-05       | Deuterium lamp  | 1 Year                                       |
| O-Ring Sets | O-Ring Set                  | 206-82037-92       | STD O-ring (Fluorine-containing rubber)                         | * <a href="#">See Chemical Compatibility</a> |
|             | O-Ring Set, Organics        | 206-82037-96       | Perfluoroelastomer (FFKM)                                       | * <a href="#">See Chemical Compatibility</a> |
|             | O-Ring Set, Silicon         | 206-82037-94       | Silicon Rubber (VQM)  | * <a href="#">See Chemical Compatibility</a> |
| Burner Head | Burner Head ASSY            | 206-50370-91       | Titanium, 10 cm   | 3 Years                                      |
|             | High Temp Burner Head       | 206-50300-91       | Titanium, N <sub>2</sub> O-C <sub>2</sub> H <sub>2</sub> , 5 cm | 3 Years                                      |
| Hoses       | Hose, 8x2B-BK               | 016-02101-04       | For support gas (Air/Argon), Black                              | 3 Years                                      |
|             | Hose, 8x2B-R                | 016-02101-03       | For fuel gas (C <sub>2</sub> H <sub>2</sub> ), Red              | 3 Years                                      |
|             | Hose, 8x2B-G                | 016-02101-01       | For support gas (N <sub>2</sub> O), Green                       | 3 Years                                      |
| Atomizer    | Nebulizer                   | 206-52300-91       |   | 2 Years                                      |
|             | Burner Socket               | 206-50179-00       |   | 3 Years                                      |
|             | Chamber ASSY                | 206-50363-91       | Engineering plastic PP  | 6 Years                                      |
|             | Mixer                       | 206-50486-00       |   | 6 Years                                      |
| Tubing      | Sampling tube               | 206-50438-91       | PTFE tube for sample uptake                                     | * <a href="#">See Chemical Compatibility</a> |
|             | Drain ASSY                  | 206-50748-92       | Overflow-type drainage trap                                     |  |
|             | Polyethylene capillary No.3 | 200-31328-01       | For sealing the capillary                                       |  |
|             | Drain Tubing                | 016-43201-02       | Drain tube, connects to drain bottle. Specify 3 meters.         |  |
| Misc.       | Software, WizAArd 2.40      | 206-58481-91       | Compatible with Windows 7, 32-bit                               |  |
|             | Cleaning wire               | 201-79229-01       | For cleaning the capillary                                      |  |
|             | Seal Joint Assembly         | 206-52039-91       | For gas leak checking   |  |
|             | Window Panel w(30)-Q        | 205-82661-02       | Optical windows, inside atomization chamber                     |  |

# ASC-6100



| Item | Part Number  | Part Name              |
|------|--------------|------------------------|
| 1    | 037-02881-03 | KNOB                   |
| 2    | 206-50062-00 | TURNTABLE FOR ASC-6100 |
| 3    | 206-50290-91 | NOZZLE ASSY, F         |
| 4    | 206-50295-01 | COVER, TURN TABLE      |
| 5    | 206-87284-91 | 2 LITER RINSE BOTTLE   |
| 6    | 206-50265-00 | BOTTLE HOLDER          |
| 7    | 206-50468-91 | RS232C CABLE           |
| 8    | 071-60816-12 | POWER CABLE            |
| 9    | 037-51260-09 | CANOE CLIP-WHITE       |
| 10   | 036-11206-00 | O-RING, 4D P8          |



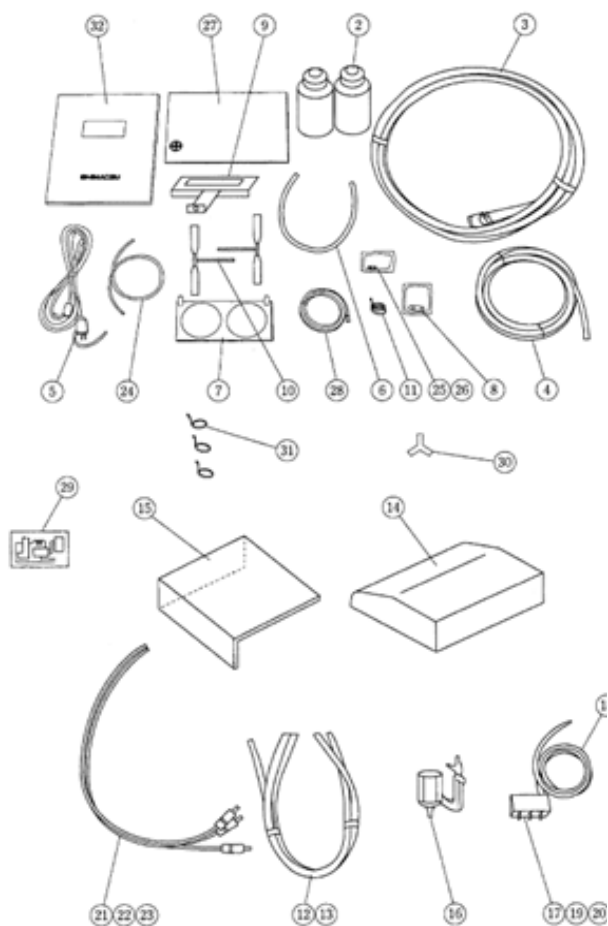
## Maintenance Parts: ASC-6100

|                         | Part Name               | Part Number  | Remarks                             | Replacement |
|-------------------------|-------------------------|--------------|-------------------------------------|-------------|
| <b>Nozzles</b>          | Nozzle ASSY, F          | 206-50290-91 | Standard                            |             |
|                         | Nozzle ASSY, HVG        | 206-67563-00 | For HVG                             |             |
| <b>Vials &amp; Cups</b> | 16 mL Sample vial       | 046-00147-04 | Each, polypropylene, Flame Cont.    |             |
|                         | 16 mL Sample vial       | 220-95369-00 | 1000/PK, polypropylene, Flame Cont. |             |
|                         | 53 mL Glass Vial        | 200-93113-05 | Each, glass, Flame Cont.            |             |
|                         | Glass Test tube (12 mL) | 046-00150-27 | 12 mL Glass                         |             |
| <b>Misc.</b>            | Rinse liquid bottle     | 206-87284-91 | 2 L plastic tank for rinse liquid   |             |
|                         | COMMUNICATION CABLE     | 206-50468-91 |                                     |             |
|                         | Fuse                    | 072-02004-11 | 250 V, 3.15 A, Type T               |             |

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# Hydride Vapor Generator




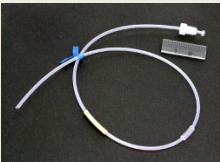


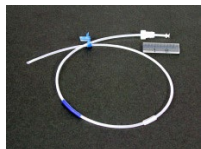




| Item | Part Name  | Part Number  |
|------|--|--------------|
| 1    | Hydride vapor generator main body                  |              |
| 2    | Reagent bottle (polyethylene)                      | 204-09363-01 |
| 3    | Gas Hose   | 204-05845-02 |
| 4    | Drain tube (Tygon)                                 | 206-60250-02 |
| 5    | AC Cable (110-117 V)                               | 206-13774-00 |
|      | Power cable (220-240 V)                            | 071-60814-05 |
| 6    | Fluorinated rubber tube                            | 206-60250-01 |
| 7    | Guide plate  | 206-18033-00 |
| 8    | Fuse 1 A (110-117 V)                               | 072-01214-02 |
|      | Fuse 0.3 A (220-240 V)                             | 072-01664-12 |
| 9    | Cell holder  | 206-77610-91 |
| 10   | Absorption cell                                    | 206-77607-00 |
| 11   | Hose clamp, 16 mm                                  | 037-61019-00 |
| 12   | Pump tube 080 (reagent)                            | 208-90038-08 |
| 13   | Pump tube 130 (sample)                             | 208-90038-13 |
| 14   | Front cover  | 206-17878-00 |
| 15   | Side cover   | 206-17879-00 |
| 16   | Gas/liquid separator                               | 206-17839-00 |
| 17   | Manifold   | 206-17825-00 |
| 18   | Reaction Coil                                      | 206-18037-00 |
| 19   | Hose nipple  | 204-64601-00 |
| 20   | O-ring, EPR  | 200-62522-00 |
| 21   | Suction tube (yellow-marked) for NaBH <sub>4</sub> | 206-18036-01 |
| 22   | Suction tube (blue-marked) for HCl                 | 206-18036-02 |
| 23   | Suction tube (not marked, 30 cm) for sample        | 206-18036-03 |
| 24   | Suction tube (not marked, 80 cm) for ASC           | 206-18036-04 |
| 25   | Wire mark (yellow)                                 | 072-83083-03 |
| 26   | Wire mark (blue)                                   | 072-83083-02 |
| 27   | Vinyl cover  | 206-18068-00 |
| 28   | Grounding line                                     | 202-32982-00 |
| 29   | Label (flow path diagram)                          | 206-18616-00 |
| 30   | Hose nipple, HN802                                 | 035-61522-00 |
| 31   | Hose clamp, 14 mm                                  | 037-61018-00 |
| 32   | Instruction manual                                 | 206-96739-00 |

## Consumables: HVG Unit

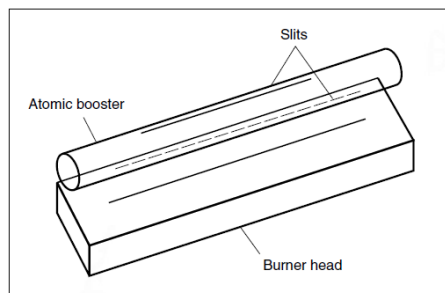
| Part Name               | Part Number  | Appearance  |
|-------------------------|--------------|---|
| Pump tube 080 (reagent) | 208-90038-08 |  |
| Pump tube 130 (sample)  | 208-90038-13 |  |
| Absorption cell         | 206-77607-00 |  |

## Maintenance Parts: HVG Unit

| Part Name                                 | Part Number  | Appearance  |
|---|--------------|---|
| Gas/liquid separator                      | 206-17839-00 |   |
| Manifold (except for O-ring, hose nipple) | 206-17825-00 |  |
| Reaction Coil                             | 206-18037-00 |  |
| Suction tube (yellow-marked) for NaBH4    | 206-18036-01 |  |

|   |              |   |
|---|--------------|---|
| Suction tube (blue-marked) for HCl          | 206-18036-02 |    |
| Suction tube (not marked, 30 cm) for sample | 206-18036-03 |    |
| Suction tube (not marked, 80 cm) for ASC    | 206-18036-04 |    |
| Fluorinated rubber tube                     | 206-60250-01 |    |
| Joint (reagent)                             | 206-17826-01 |   |
| Joint (sample)                              | 206-17826-02 |  |

## Atom Booster



Atomic Booster

| Item | Part Number  | Part Name               |
|------|--------------|-------------------------|
| 1    | 206-50957-91 | Atom Booster Assembly   |
| 2    | 206-50937-01 | Quartz Tube Replacement |



# Chemical Compatibility

## AA-6200

| Chemical Name      | Drain Tank     | Drain Tube |                 | O-Rings  |      |     | Chamber   | Conditions of Use  |
|--------------------|----------------|------------|-----------------|----------|------|-----|-----------|--|
|                    | (Polyethylene) | Standard   | Optional (PTFE) | Standard | FFKM | VQM | Nebulizer |  |
| Water <sup>1</sup> | A              | A          | A               | A        | A    | A   | A         |  |
| Ethanol            | B              | B          | B               | B        | B    | B   | B         |  |
| Hydrochloric acid  | B              | B          | B               | B        | B    | B   | B         |  |
| Nitric acid        | B              | B          | B               | B        | B    | B   | B         |  |
| Sulfuric acid      | B              | B          | B               | B        | B    | B   | B         |  |
| Hydrofluoric acid  | B              | B          | B               | B        | B    | X   | B         |  |
| Perchloric acid    | B              | B          | B               | B        | B    | X   | B         |  |
| Methanol           | B              | B          | B               | C        | B    | B   | B         | Change O-rings   |
| Sodium hydroxide   | B              | B          | B               | X        | B    | X   | B         |  |
| Gasoline           | C              | C          | B               | B        | B    | X   | B         | Change the drain tank once every month. Change the standard drain tube once every month, or replace it with the optional product   |
| Petroleum          | C              | C          | B               | B        | B    | C   | B         |  |
| Acetic acid        | C              | C          | B               | X        | B    | B   | B         | Change the O-rings to the optional products. Change the drain tank once every month. Change the standard drain tube once every month, or replace it with the optional product. |
| MIBK               | C              | C          | B               | X        | B    | C   | B         |  |
| Butyl acetate      | C              | C          | B               | X        | B    | C   | B         |  |
| Acetone            | C              | C          | B               | X        | B    | C   | B         |  |

**1: Acid concentration less than 0.5%**

**A: Applicable. Replacement required once every 3 years**

**B: Applicable. Replacement required once a year**

**C: Applicable. Replacement required once a month**

**X: Cannot be used**

## ASC-6100

| Chemical Name       | Measurement Method | Flame Continuous Method |              |
|---------------------|--------------------|-------------------------|--------------|
|                     | Application        | Sample                  | Rinse Liquid |
| Water* <sup>1</sup> |                    | ○                       | ○            |
| Ethanol             |                    | ○                       | ○            |
| Hydrochloric acid   |                    | ○                       | ○            |
| Nitric acid         |                    | ○                       | ○            |
| Sulfuric acid       |                    | ○                       | ○            |
| Hydrofluoric acid   |                    | ○                       | ×            |
| Xylene              |                    | ×                       | ×            |
| Perchloric acid     |                    | ○ <sup>*2</sup>         | ×            |
| Methanol            |                    | ○                       | ○            |
| Sodium hydroxide    |                    | ○                       | ×            |
| Gasoline            |                    | ×                       | ×            |
| Petroleum           |                    | ×                       | ×            |
| Acetic acid         |                    | ×                       | ×            |
| MIBK                |                    | ×                       | ×            |
| Butyl acetate       |                    | ×                       | ×            |
| Acetone             |                    | ×                       | ×            |
| IPA                 |                    | ×                       | ×            |
| THF                 |                    | ×                       | ×            |

○ : Can be used; for the replacement intervals of the parts, see "Maintenance Parts".

△ : Can be used; the replacement interval of a pump tube is 3 months. For the replacement intervals of other parts, see "Maintenance Parts".

× : Use prohibited

\*1 : Acid concentration of 0.5 % or lower

\*2 : For sample cups and reagent cups, use those made of glass (optional).

# Lamps

## Single Element Lamps

| <b>Name</b> | <b>Symbol</b> | <b>Part Number</b> | <b>Name</b> | <b>Symbol</b> | <b>Part Number</b> |
|-------------|---------------|--------------------|-------------|---------------|--------------------|
| Aluminum    | Al            | 200-38422-01       | Nickel      | Ni            | 200-38422-15       |
| Antimony    | Sb            | 200-38422-24       | Niobium     | Nb            | 200-38422-32       |
| Arsenic     | As            | 200-38422-42       | Palladium   | Pd            | 200-38422-41       |
| Barium      | Ba            | 200-38422-03       | Platinum    | Pt            | 200-38422-20       |
| Beryllium   | Be            | 200-38422-04       | Potassium   | K             | 200-38422-22       |
| Bismuth     | Bi            | 200-38422-43       | Rhenium     | Re            | 200-38422-44       |
| Boron       | B             | 200-38422-39       | Rhodium     | Rh            | 200-38422-49       |
| Cadmium     | Cd            | 200-38422-06       | Rubidium    | Rb            | 200-38422-33       |
| Calcium     | Ca            | 200-38422-05       | Ruthenium   | Ru            | 200-38422-45       |
| Cerium      | Ce            | 200-38422-26       | Selenium    | Se            | 200-38422-46       |
| Cesium      | Cs            | 200-38422-27       | Silicon     | Si            | 200-38422-16       |
| Chromium    | Cr            | 200-38422-07       | Silver      | Ag            | 200-38422-02       |
| Cobalt      | Co            | 200-38422-09       | Sodium      | Na            | 200-38422-14       |
| Copper      | Cu            | 200-38422-08       | Strontium   | Sr            | 200-38422-34       |
| Dysprosium  | Dy            | 200-38422-60       | Tantalum    | Ta            | 200-38422-35       |
| Gallium     | Ga            | 200-38422-40       | Tellurium   | Te            | 200-38422-47       |
| Germanium   | Ge            | 200-38422-11       | Thallium    | Tl            | 200-38422-74       |
| Gold        | Au            | 200-38422-25       | Tin         | Sn            | 200-38422-18       |
| Iron        | Fe            | 200-38422-10       | Titanium    | Ti            | 200-38422-17       |
| Lanthanum   | La            | 200-38422-29       | Tungsten    | W             | 200-38422-36       |
| Lead        | Pb            | 200-38422-21       | Vanadium    | V             | 200-38422-19       |
| Lithium     | Li            | 200-38422-30       | Zinc        | Zn            | 200-38422-23       |
| Magnesium   | Mg            | 200-38422-12       | Zirconium   | Zr            | 200-38422-37       |
| Manganese   | Mn            | 200-38422-13       |             |               |                    |
| Mercury     | Hg            | 200-38422-28       |             |               |                    |
| Molybdenum  | Mo            | 200-38422-31       |             |               |                    |

## Multi-Element-Special Order Items

| Base Element | Amalgam Metal/s   | P/N      | Base Element | Amalgam Metal/s | P/N          |          |
|--------------|-------------------|----------|--------------|-----------------|--------------|----------|
| Aluminium    | Ca                | 80014625 | Chromium     | Co+Fe+Mn+Ni     | 80018218     |          |
|              | Ca + Fe + Mg      | 80018135 |              | Cu              | 80014710     |          |
|              | Ca + Mg           | 80014866 |              | Cu + Co         | 80018205     |          |
|              | Ca+Cu+Fe+Mg+Si+Zn | 80018133 |              | Cu + Fe         | 80018224     |          |
|              | Mg                | 80014627 |              | Cu + Fe + Mn    | 80018225     |          |
|              | Si                | 80014630 |              | Cu + Fe + Ni    | 80018227     |          |
|              | Si + Ti           | 80014869 |              | Cu + Mn         | 80018229     |          |
|              | Ti                | 80014660 |              | Cu + Mn + Ni    | 80018230     |          |
| Antimony     | As + Bi           | 80014872 |              | Cu + Ni         | 80018233     |          |
| Arsenic      | Se + Te           | 80014874 |              | Cu + Ni + Ag    | 80018234     |          |
| Barium       | Ca + Mg + Sr      | 80018161 |              | Cu+Fe+Mn+Ni     | 80018226     |          |
|              | Sr                | 80014663 |              | Cu+Fe+Ni+Ag     | 80018228     |          |
| Cadmium      | Zn                | 80014666 |              | Fe              | 80014713     |          |
| Calcium      | Ba                | 80014669 |              | Fe + Mn         | 80018236     |          |
|              | Ba + Sr           | 80014876 |              | Fe + Mn + Ni    | 80018237     |          |
|              | Mg                | 80014672 |              | Fe + Ni         | 80018239     |          |
|              | Mg + Si           | 80014879 |              | Mn              | 80014716     |          |
|              | Mg + Zn           | 80014882 |              | Mn + Ni         | 80018241     |          |
|              | Si                | 80014676 |              | Mo              | 80014719     |          |
|              | Sr                | 80014680 |              | Ni              | 80014722     |          |
|              | Zn                | 80014683 |              | Cobalt          | Cu           | 80014725 |
| Chromium     | Co                | 80014688 |              |                 | Cu + Fe      | 80018177 |
|              | Co + Cu + Fe      | 80018206 |              |                 | Cu + Fe + Mn | 80018178 |
|              | Co + Cu + Mn      | 80018213 |              |                 | Cu + Fe + Ni | 80018183 |
|              | Co + Cu + Ni      | 80018215 |              |                 | Cu + Mn      | 80018185 |
|              | Co + Fe           | 80018216 |              |                 | Cu + Mn + Ni | 80018187 |
|              | Co + Fe + Mn      | 80018217 |              |                 | Cu+Fe+Mn+Mo  | 80018179 |
|              | Co + Fe + Ni      | 80018219 |              |                 | Cu+Fe+Mn+Ni  | 80018180 |
|              | Co + Mn           | 80018220 |              |                 | Fe           | 80014728 |
|              | Co + Mn + Ni      | 80018221 |              |                 | Fe + Mn + Ni | 80018193 |
|              | Co + Ni           | 80018223 |              |                 | Mn           | 80014731 |
|              | Co+Cu+Fe+Mn       | 80018207 |              |                 | Mn + Ni      | 80018199 |
|              | Co+Cu+Fe+Mn+Mo    | 80018208 | Mo           |                 | 80014734     |          |
|              | Co+Cu+Fe+Mn+Ni    | 80018209 | Ni           |                 | 80014737     |          |
|              | Co+Cu+Fe+Ni       | 80018212 |              |                 |              |          |
|              | Co+Cu+Mn+Ni       | 80018214 |              |                 |              |          |

## Multi-Element – Special Order Items

| Base Element | Amalgam Metal/s | P/N      | Base Element | Amalgam Metal/s | P/N      |
|--------------|-----------------|----------|--------------|-----------------|----------|
| Copper       | Fe              | 80014740 | Molybdenum   | Co + Cu         | 80018189 |
|              | Fe + Mn         | 80018245 |              | Co + Cu + Fe    | 80018182 |
|              | Fe + Mn + Ni    | 80018247 |              | Co + Cu + Mn    | 80018186 |
|              | Fe + Mn + Zn    | 80018249 |              | Co + Fe         | 80018196 |
|              | Fe + Mo         | 80018251 |              | Co + Fe + Mn    | 80018192 |
|              | Fe + Ni         | 80018252 |              | Co + Mn         | 80018198 |
|              | Fe + Ni + Ag    | 80018253 |              | Cr + Co         | 80018222 |
|              | Fe + Zn         | 80018254 |              | Cr + Cu         | 80018232 |
|              | Mn              | 80014743 |              | Cr + Fe         | 80018238 |
|              | Mn + Ni         | 80018258 |              | Cr + Mn         | 80018240 |
|              | Mn + Zn         | 80018260 |              | Cu + Fe         | 80018251 |
|              | Mo              | 80014746 |              | Cu + Fe + Mn    | 80018246 |
|              | Ni              | 80014748 |              | Cu + Mn         | 80018257 |
|              | Zn              | 80014751 |              | Fe + Mn         | 80018265 |
| Gold         | Ag              | 80014810 | Platinum     | Ag              | 80014849 |
|              | Cu              | 80014755 | Silicon      | Ti              | 80014852 |
|              | Cu + Ni         | 80018152 | Silver       | Cr              | 80014855 |
|              | Ni              | 80014758 |              | Cr + Cu         | 80018128 |
|              | Pt              | 80014761 |              | Cu              | 80014858 |
|              | Pt + Ag         | 80018155 |              | Cu + Ni         | 80018130 |
| Iron         | Mn              | 80014814 | Sodium       | K               | 80014861 |
|              | Mn + Ni         | 80018266 |              |                 |          |
|              | Mn + Zn         | 80018268 |              |                 |          |
|              | Mo              | 80014817 |              |                 |          |
|              | Ni              | 80014819 |              |                 |          |
|              | Zn              | 80014822 |              |                 |          |
| Magnesium    | Si              | 80014825 |              |                 |          |
|              | Zn              | 80018278 |              |                 |          |
| Manganese    | Mo              | 80014828 |              |                 |          |
|              | Ni              | 80014840 |              |                 |          |
|              | Zn              | 80014844 |              |                 |          |

## Single Element Standards

1000 mg/L, (ppm)

| Element Name | Element Symbol & Matrix  | Part number  | Element Name | Element Symbol & Matrix   | Part number  |
|--------------|--|--------------|--------------|---|--------------|
| Aluminum     | Al in 2% HNO <sub>3</sub>  | 220-95366-02 | Neodymium    | Nd in 2% HNO <sub>3</sub>   | 220-95366-29 |
| Antimony     | Sb in 5% HNO <sub>3</sub> + 0.1% HF  | 220-95366-14 | Nickel       | Ni in 2% HNO <sub>3</sub>   | 220-95366-30 |
| Antimony     | Sb in 5% Tartaric Acid + 2% HNO <sub>3</sub>                               | 220-95366-15 | Niobium      | Nb in 2% HNO <sub>3</sub> + 0.5% HF                                 | 220-95366-31 |
| Arsenic      | As in 2% HNO <sub>3</sub>  | 220-95366-24 | Palladium    | Pd in 10% HNO <sub>3</sub> + TrHF                                   | 220-95366-32 |
| Barium       | Ba in 2% HNO <sub>3</sub>  | 220-95366-36 | Phosphorus   | P from KH <sub>2</sub> PO <sub>4</sub> in 0.05% HNO <sub>3</sub>    | 220-95366-34 |
| Beryllium    | Be in 2% HNO <sub>3</sub>  | 220-95366-44 | Phosphorus   | P in 0.05% HNO <sub>3</sub>   | 220-95366-33 |
| Bismuth      | Bi in 2% HNO <sub>3</sub>  | 220-95366-54 | Potassium    | K in 1% HNO <sub>3</sub>  | 220-95366-35 |
| Cadmium      | Cd in 2% HNO <sub>3</sub>  | 220-95366-64 | Praseodymium | Pr in 2% HNO <sub>3</sub>   | 220-95366-37 |
| Calcium      | Ca in 2% HNO <sub>3</sub>  | 220-95366-65 | Rhenium      | Re in 2% HNO <sub>3</sub>   | 220-95366-38 |
| Cerium       | Ce in 2% HNO <sub>3</sub>  | 220-95366-01 | Rubidium     | Rb in 1% HNO <sub>3</sub>   | 220-95366-39 |
| Cesium       | Cs in 1% HNO <sub>3</sub>  | 220-95366-03 | Samarium     | Sm in 2% HNO <sub>3</sub>   | 220-95366-40 |
| Chromium     | Cr in 2% HNO <sub>3</sub>  | 220-95366-04 | Scandium     | Sc in 2% HNO <sub>3</sub>   | 220-95366-41 |
| Cobalt       | Co in 2% HNO <sub>3</sub>  | 220-95366-05 | Selenium     | Se in 2% HNO <sub>3</sub>   | 220-95366-42 |
| Copper       | Cu in 2% HNO <sub>3</sub>  | 220-95366-06 | Silver       | Ag in 2% HNO <sub>3</sub>   | 220-95366-43 |
| Dysprosium   | Dy in 2% HNO <sub>3</sub>  | 220-95366-07 | Sodium       | Na in 1% HNO <sub>3</sub>   | 220-95366-45 |
| Erbium       | Er in 2% HNO <sub>3</sub>  | 220-95366-08 | Strontium    | Sr in 1% HNO <sub>3</sub>   | 220-95366-46 |
| Europium     | Eu in 2% HNO <sub>3</sub>  | 220-95366-09 | Tantalum     | Ta in 2% HNO <sub>3</sub> + 0.5% HF                                 | 220-95366-47 |
| Gadolinium   | Gd in 2% HNO <sub>3</sub>  | 220-95366-10 | Tellurium    | Te in 2% HNO <sub>3</sub> + 0.2% HF                                 | 220-95366-48 |
| Gallium      | Ga in 2% HNO <sub>3</sub>  | 220-95366-11 | Terbium      | Tb in 2% HNO <sub>3</sub>   | 220-95366-49 |
| Germanium    | Ge (NH <sub>4</sub> ) <sub>2</sub> GeF <sub>5</sub> in 1% HNO <sub>3</sub> | 220-95366-12 | Thallium     | Tl in 2% HNO <sub>3</sub>   | 220-95366-50 |
| Germanium    | Ge in 2% HNO <sub>3</sub> + 0.5% HF  | 220-95366-13 | Thorium      | Th in 2% HNO <sub>3</sub>   | 220-95366-51 |
| Hafnium      | Hf in 2% HNO <sub>3</sub> + 0.5% HF  | 220-95366-16 | Thulium      | Tm in 2% HNO <sub>3</sub>   | 220-95366-52 |
| Holmium      | Ho in 2% HNO <sub>3</sub>  | 220-95366-17 | Tin          | Sn in 2% HNO <sub>3</sub> + 0.5% HF                                 | 220-95366-53 |
| Indium       | In in 2% HNO <sub>3</sub>  | 220-95366-18 | Titanium     | Ti in 2% HNO <sub>3</sub> + 0.1% HF                                 | 220-95366-55 |
| Iron         | Fe in 2% HNO <sub>3</sub>  | 220-95366-19 | Tungsten     | W in 2% HNO <sub>3</sub> + 1% HF                                    | 220-95366-56 |
| Lanthanum    | La in 2% HNO <sub>3</sub>  | 220-95366-20 | Uranium      | U in 2% HNO <sub>3</sub>  | 220-95366-57 |
| Lead         | Pb in 2% HNO <sub>3</sub>  | 220-95366-21 | Vanadium     | V in 2% HNO <sub>3</sub>  | 220-95366-58 |
| Lithium      | Li in 1% HNO <sub>3</sub>  | 220-95366-22 | Ytterbium    | Yb in 2% HNO <sub>3</sub>   | 220-95366-59 |
| Lutetium     | Lu in 2% HNO <sub>3</sub>  | 220-95366-23 | Yttrium      | Y in 2% HNO <sub>3</sub>  | 220-95366-60 |
| Magnesium    | Mg in 2% HNO <sub>3</sub>  | 220-95366-25 | Zinc         | Zn in 2% HNO <sub>3</sub>   | 220-95366-61 |
| Manganese    | Mn in 2% HNO <sub>3</sub>  | 220-95366-26 | Zirconium    | Zr from ZrO(NO <sub>3</sub> ) <sub>2</sub> in 0.5% HNO <sub>3</sub> | 220-95366-62 |
| Mercury      | Hg in 2% HNO <sub>3</sub>  | 220-95366-27 | Zirconium    | Zr in 2% HNO <sub>3</sub> + 0.5% HF                                 | 220-95366-63 |
| Molybdenum   | Mo in 2% HNO <sub>3</sub> + 0.1% HF  | 220-95366-28 |              |   |              |



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