

# Mercury Sorbent Traps

Compliance Monitoring Solutions for MATS



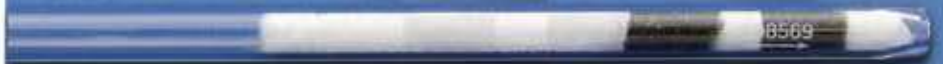
Method 30B Trap



PS 12B Trap



Speciated Sorbent Trap



**Mercury Emissions Monitoring**

Our goal is to provide you with all of your Mercury sampling solutions from the sorbent traps to the reporting. You can rely on us to help you meet your sampling deadlines. With the passing of more stringent EPA mercury emission regulations for coal-fired power plants, cement kilns and other combustion sources, we want to help you meet your compliance monitoring requirements. (Mercury and Air Toxics Standard (MATS), Maximum Achievable Control Technology (MACT))

We start with the best carbon we've been able to source and chemically treat the sorbent for optimum mercury adsorption and retention. All sorbent media goes through rigorous QA/QC procedures to ensure that you receive the finest sorbent media available for your monitoring requirements.

We've done extensive field and lab carbon screening studies testing in extreme environments of high SO<sub>2</sub>, particulate, moisture, and high temperature stack conditions to demonstrate our sorbents durable performance and reliable analytical results. Using a newly developed acid gas (SO<sub>2</sub>/SO<sub>3</sub>) scrubbing media we are able to minimize breakthrough issues and ensure successful mercury sampling results.

*We are dedicated to you, because when you meet your standards, we meet ours!*

### Applications:

#### PS 12B (Appendix K)

Sorbent Trap Monitoring System for total vapor-phase Hg from coal-fired power plants and stationary combustion sources. Sampling time can range from 30 minutes to 14 days depending upon the stack conditions.

#### Method 30B

Reference Method 30B for RATAs of vapor-phase Hg CEMs (continuous emission monitors) and trap monitoring systems, and Hg emission test at coal-fired boilers. Generally for short term sampling.

#### \* Stack Condition Key

- RATA \_\_\_\_\_ Relative Accuracy Test Audits of App K Sampling Systems
- Standard \_\_\_\_\_ Stack Temp 200-400°F, SO<sub>2</sub> Level < 500PPM
- Acid Gases \_\_\_\_\_ Stack Temp 200-400°F, SO<sub>2</sub> Level > 500PPM
- High Temp \_\_\_\_\_ Stack Temp > 400°F, SO<sub>2</sub> Level < 500PPM
- High Temp & Acid Gas \_\_\_\_\_ Stack Temp > 400°F, SO<sub>2</sub> Level > 500PPM

Any trap can be customized for special stack conditions. For high particulate and wet stacks, we recommend using the Apex Sorbent Trap Shield to reduce sorbent trap plugging.

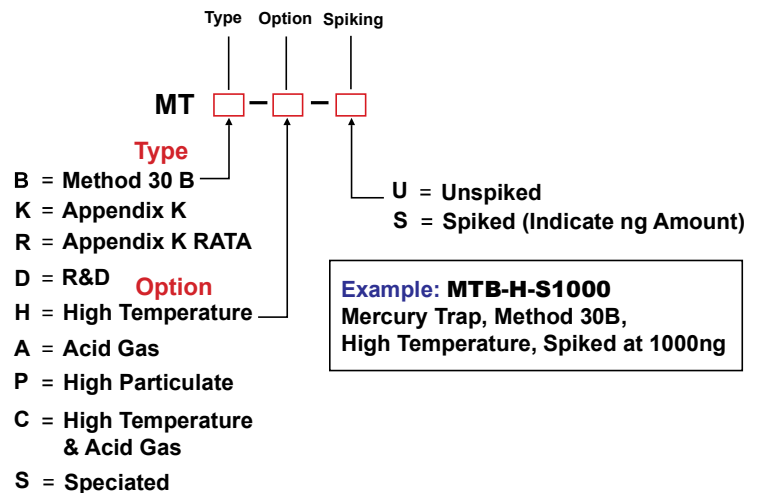


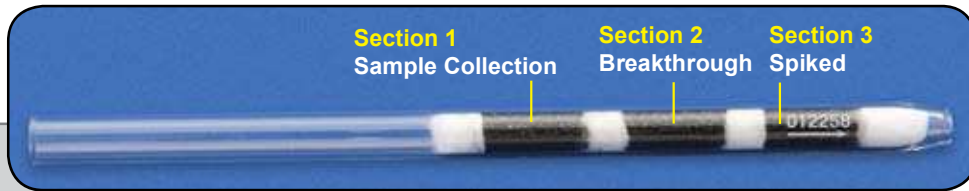
**Any Trap Can Be Customized For Special Stack Conditions**

### Apex Trap Features:

- High Capacity Impregnated Carbon
- Low Mercury Background Levels
- Custom Spiking Available
- Variable Testing Duration
- Textured, Easy Grip Caps will ensure Accurate Leak Checking
- Durable Glass Tubes
- Protective Transport Tubes
- Chain of Custody Included
- Long Term Storage

### Mercury Trap Legend





### PS 12B (Appendix K)

Description	Size (mm) O.D. x L	Stack Condition*	Sections	Section Breakdown	Part Number
Mercury Trap, App K, Standard, 3rd Section Spiked - <i>indicate spike level</i> ng	10 x 185	Standard	3 Sections	.5 grams carbon each section	MTK-S□
Mercury Trap, App K, High Temp, 3rd Section Spiked - <i>indicate spike level</i> ng	10 x 185	High Temp	3 Sections	.7 grams carbon 1st section, .5 grams section 2 & 3	MTK-H-S□
Mercury Trap, App K, Acid Gas, 3rd Section Spiked - <i>indicate spike level</i> ng	10 x 185	Acid Gase	3 Sections	.5 grams sorbent conditioning pre-section, .5 grams carbon section 1, 2 & 3	MTK-A-S□
Mercury Trap, App K, High Particulate, 3rd Section Spiked - <i>indicate spike level</i> ng	10 x 185	High Particulate	3 Sections	Inert pre-filter, .5 grams carbon section 1, 2 & 3	MTK-P-S□
Mercury Trap, App K, RATA, 3rd Section Spiked - <i>indicate spike level</i> ng	10 x 185	Relative Accuracy Test Audits	3 Sections	.3 grams carbon each section	MTR-S□

Standard Spike Levels Range from 1,000 ng to 20,000 ng - **CUSTOM LEVELS AVAILABLE**



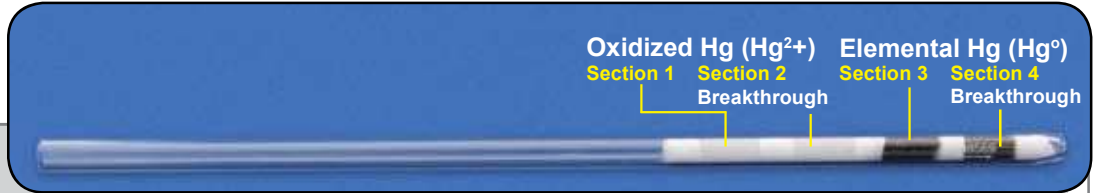
### EPA Reference (Method 30B)

Description	Size (mm) O.D. x L	Stack Condition*	Sections	Section Breakdown	Part Number
Mercury Trap, 30B, Standard, Unspiked	10 x 185	Standard	2 Sections	.3 grams carbon each section	MTB-U
Mercury Trap, 30B, High Temp, Unspiked	10 x 185	High Temp	2 Sections	.5 grams carbon 1st section, .3 grams carbon 2nd section	MTB-H-U
Mercury Trap, 30B, Acid Gas, Unspiked	10 x 185	Acid Gases	2 Sections	.5 grams sorbent conditioning pre-section, .3 grams carbon each section	MTB-A-U
Mercury Trap, 30B, High Temp/Acid Gas, Unspiked	10 x 185	Acid Gases & High Temp	2 Sections	.5 grams sorbent conditioning pre-section, .5 grams carbon 1st section, .3 grams carbon 2nd section	MTB-C-U
Mercury Trap, 30B, Standard, 1st Section Spiked - <i>indicate spike level</i> ng	10 x 185	Standard	2 Sections	.3 grams carbon each section	MTB-S□
Mercury Trap, 30B, High Temp, 1st Section Spiked - <i>indicate spike level</i> ng	10 x 185	High Temp	2 Sections	.5 grams carbon 1st section, .3 grams carbon 2nd section	MTB-H-S□
Mercury Trap, 30B, Acid Gas, 1st Section Spiked - <i>indicate spike level</i> ng	10 x 185	Acid Gases	2 Sections	.5 grams sorbent conditioning pre-section, .3 grams carbon each section	MTB-A-S□
Mercury Trap, 30B, High Temp/Acid Gas, 1st Section Spiked - <i>indicate spike level</i> ng	10 x 185	Acid Gases & High Temp	2 Sections	.5 grams sorbent conditioning pre-section, .5 grams carbon 1st section, .3 grams carbon 2nd section	MTB-C-S□

Standard Spike Levels Range from 50 ng to 500 ng - **CUSTOM LEVELS AVAILABLE**

## R&D Traps for Research & Baseline Testing

**Speciated Mercury Measurement of Flue Gas Requires use of Air Cooled Probe**

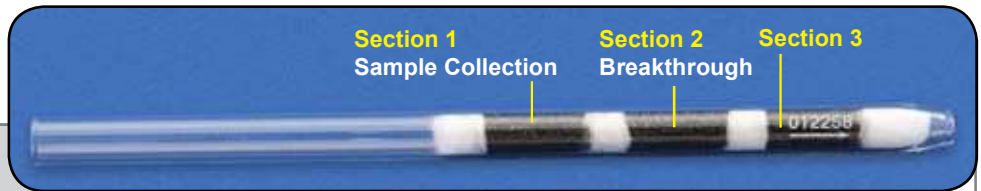


### Speciated Mercury Trap

Description	Size (mm) O.D. x L	Stack Condition*	Sections	Section Breakdown	Part Number
Mercury Trap, 30B, Speciated, Unspiked	10 x 300	Evaluation & Research	4 Sections	.7 grams KCl section 1 & 2, .3 grams carbon section 3 & 4	MTB-S-U

Flue gas Oxidized Hg ( $Hg^{2+}$ ) species are adsorbed by a potassium chloride (KCl). After passing through the KCl sorbent, Elemental Hg ( $Hg^0$ ) is collected by iodated carbon sorbent. Total Hg ( $Hg_T$ ) is determined by summation of species.

Proper temperature maintenance is critical ( $<130^{\circ}C$ ) for accurate speciation results. Sorbent trap shields are used to prevent buildup of particulate, which can potentially oxidize mercury creating a bias



### Mercury Trap R&D

Description	Size (mm) O.D. x L	Stack Condition*	Sections	Section Breakdown	Part Number
Mercury Trap, Standard, Unspiked	10 x 185	Research or Baseline Testing	3 Sections	.5 grams carbon each section	MTK-U



### Mercury Trap R&D

Description	Size (mm) O.D. x L	Stack Condition*	Sections	Section Breakdown	Part Number
Mercury Trap, Standard, Unspiked	10 x 185	Research or Baseline Testing	4 Sections	.3 grams carbon each section	MTD-U

**Trap Suitability Study** – Recognizing that every source has different conditions ( $NO_x$ ,  $SO_2$ , moisture content, etc.), our Analysis Division can develop R&D traps configured for your stack condition. Call for more information.

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