# Anasorb 747

## *Anasorb® — a Trademark of Quality*

In 1973, SKC made the first commercial sorbent tube to be sold to NIOSH. Since then, sorbent tube technology has continued to advance and SKC is proud to have played a major role in this effort. To more easily identify SKC proprietary sorbents in air sampling methods and other technical areas, the name Anasorb became a registered trademark in 1990. While the first sorbents with the Anasorb trademark were beaded materials, the Anasorb name is used for SKC proprietary sorbents of all types.

**Anasorb 747**

Anasorb 747 is a synthetic carbon with low ash content. It was examined as a candidate material for sampling polar organic compounds that cannot be sampled using coconut charcoal, such as ketones.[1] Coconut charcoal has a high surface area and adsorbs water vapor. This causes the reaction of ketones (and other polar compounds) to take place faster, which produces reaction products and reduces desorption efficiency. Anasorb 747 is hydrophobic (picks up less water vapor) and has a lower surface area; therefore, there is less reactivity and less breakdown of the original adsorbed ketones providing a higher desorption efficiency for most compounds.

In dynamic uptake studies, Anasorb 747 picked up less water vapor than coconut charcoal. Acetone and 2-butanone adsorbed from humid atmospheres showed only very slow breakdown at ambient temperatures. Breakdown was further slowed by refrigeration. Desorption efficiencies using carbon disulfide alone were high (> 90%), reproducible, and showed little difference (4 to 5%) between wet and dry samples. When a polar co-solvent (e.g., butanol) was added to the desorption solvent, recoveries from the wet sorbent increased to nearly 100%.

Anasorb 747 has properties similar to the best petroleum charcoals and can be used for a very wide range of polar and non-polar organic vapors. When combined with a solvent appropriate to mixtures such as dimethylformamide, successful sampling is possible for a majority of organic vapors.

For a list of Anasorb 747 sorbent tubes for particular chemical hazards, refer to the chart on the reverse side.

## *Other sorbents with the Anasorb name:*

**Anasorb 727 -** a microporous polymer for sampling less volatile reactive and polar compounds

**Anasorb GCB1 -** Graphitized Carbon Black for sampling aliphatic and aromatic hydrocarbons

**Anasorb GCB2 -** Graphitized Carbon Black for sampling less volatile compounds

**Anasorb CSC -** the new lot 2000 of Coconut-shell Charcoal for sampling organic compounds

# Anasorb 747

## Sorbent Tube Applications for Anasorb 747

| Chemical Sampled | Sampling Method | Anasorb 747 Amount (mg) | Size (mm) OD x L | Cat. No. |
|---|---|---|---|---|
| **Ammonia** | OSHA ID 188 | 250/500 coated with sulfuric acid | 8 x 110 | 226-29 |
| **2-Butanone (MEK)** | NIOSH 2500 | 140/70 | 6 x 70 | 226-81A |
| **n-Butyl acrylate** | Non-agency Method 54[2] | 140/70 | 6 x 70 | 226-81A |
| **2-Chloroethanol (ethylene chlorohydrin)** | NIOSH 2513 | 140/70 | 6 x 70 | 226-81A |
| **Desflurane** | OSHA 106 | 140/70 | 6 x 70 | 226-81A |
| **1,1-Dichloro-1-nitroethane** | NIOSH 1601; OSHA 07 | 140/70 | 6 x 70 | 226-81A |
| **1,2-Dichloropropane (propylene dichloride)** | NIOSH 1013 | 140/70 | 6 x 70 | 226-81A |
| **Dipropylene glycol methyl ether (glycol ethers)** | NIOSH 2554 | 140/70 | 6 x 70 | 226-81A |
| **Dipropylene glycol monomethyl ether (glycol ethers)** | NIOSH 2554 | 140/70 | 6 x 70 | 226-81A |
| **Enflurane** | OSHA 103 | 140/70 | 6 x 70 | |
| **Ethyl acrylate** | Non-agency Method 54[2] | 140/70 | 6 x 70 | 226-81A |
| **Ethyl alcohol (ethanol)** | OSHA 100 | 400 (front tube)<br>200 (back tube) | 8 x 110 | 226-82 |
| **Ethylene chlorohydrin** | OSHA 07 | 140/70 | 6 x 70 | 226-81A |
| **Ethylene oxide** | OSHA 1010; ASTM D5578; NIOSH 1614 | 100/50 coated with hydrobromic acid | 6 x 70 | 226-178 |
| **Furfural** | OSHA 72 | 140/70 | 6 x 70 | 226-81A |
| **Halothane** | OSHA 103 | 140/70 | 6 x 70 | 226-81A |
| **Iodine** | OSHA ID 212 | 50/100 coated with potassium hydroxide | 6 x 70 | 226-80 |
| **Iodine (particulates present)** | OSHA ID 212 | 50/100 coated with potassium hydroxide | 16 to 8 x 85 | 226-142 |
| **Isoflurane** | OSHA 103 | 140/70 | 6 x 70 | 226-81A |
| **Isophorone** | NIOSH 2508; OSHA 07 | 140/70 | 6 x 70 | 226-81A |
| **Isopropyl alcohol** | OSHA 109 | 400 (front tube)<br>200 (back tube) | 8 x 110 | 226-82 |
| **1-Methoxy-2-propanol (glycol ethers)** | NIOSH 2554 | 140/70 | 6 x 70 | 226-81A |
| **1-Methoxy-2-propyl acetate (glycol ethers)** | NIOSH 2554 | 140/70 | 6 x 70 | 226-81A |
| **Methyl acrylate** | Non-agency Method 54[2] | 140/70 | 6 x 70 | 226-81A |
| **Methyl alcohol** | OSHA 91 | 400 (front tube)<br>200 (back tube) | 8 x 110 | 226-82 |
| **Methyl bromide** | OSHA PV2040 | 200/400 | 8 x 110 | 226-83 |
| **Methyl ethyl ketone** | NIOSH 2500 | 140/70 | 6 x 70 | 226-81A |
| **Methyl formate** | OSHA PV2041 | 200/400 | 8 x 110 | 226-83 |
| **Methyl methacrylate** | Non-agency Method 54[2] | 140/70 | 6 x 70 | 226-81A |
| **Propargyl alcohol** | OSHA 97 | 100/50 coated with hydrobromic acid | 6 x 70 | 226-178 |
| **n-Propyl nitrate** | OSHA 07 | 140/70 | 6 x 70 | 226-81A |
| **Propylene oxide** | OSHA 88 | 140/70 | 6 x 70 | 226-81A |
| **Styrene** | Non-agency Method 54[2] | 140/70 | 6 x 70 | 226-81A |
| **Sulfur dioxide** | OSHA ID 200 | 50/100 coated with potassium hydroxide | 6 x 70 | 226-80 |
| **1,1,2,2-Tetrachloroethane** | NIOSH 1019; OSHA 07 | 140/70 | 6 x 70 | 226-81A |
| **Toluene** | OSHA 111 | 140/70 | 6 x 70 | 226-81A |
| **Anasorb 747 in bulk/100 gm** | | | | P226200 |

***For Passive Samplers with Anasorb 747, see www.skcinc.com/Passive747.***

## References


[1] Harper, M., "Anasorb 747 - A Universal Sorbent for Air Sampling?" presented at the Air & Waste Management U.S. EPA International Symposium on Measurement of Toxic & Related Air Pollutants, Research Triangle Park, North Carolina, April 29 - 30, 1997

[2] Saunders, H., Methyl Acrylate, Acrylonitrile, Ethyl Acrylate, n-Butyl Acrylate, Methyl Methacrylate, n-Butyl Methacrylate, and Styrene Using Anasorb 747 Sorbent Tubes, Rohm & Haas Corporate Hygiene Laboratory, Method IH9402, SKC Non-agency Method 54