EFFECTIVE LEVELS OF ACTIVATED TREATED CARBON ADSORPTION

As you review this chart, please note the following facts:

- Activity is a term used to describe a standard test which determines the effective adsorptive capacity of a sample of activated carbon with a given substance.
- Generally, the adsorptive capacity of any activated carbon is higher for adsorbates (substances) of increasing molecular weight and boiling points.
- The effective life of activated carbon depends on the type and quantity of the compounds (substances) to be adsorbed and coming in actual contact with the activated carbon (dwell time).
- The substances listed here encompass specific chemical compounds, classes of compounds and mixtures of variable composition. The levels assigned to specific substances represent "typical" adsorptive effectiveness. Actual applications using activated carbon to adsorb the same substances may vary depending on numerous environmental conditions.
- The numerical levels assigned here represent the following:

4. High adsorptive capacity with substance listed
3. Satisfactory adsorptive capacity with substance listed
2. Borderline adsorptive capacity with substance listed
1. Low adsorptive capacity with substance listed

SUBSTANCE	MOLECULAR WEIGHT	APPROX. ACTIVITY LEVEL	REMARKS
Methane Series			
Methane	16.04	1	Illuminating Gas
Ethane	30.07	1	Illuminating Gas
Propane	44.09	2	Heating Gas
Butane	58.12	2	Heating
Pentane	72.15	3	Light Naphtha
Hexane	86.17	3	Gasoline
Heptane	100.20	4	Gasoline
Octane	114.23	4	Gasoline
Nonane	128.25	4	Kerosene
Decane	142.28	4	Kerosene

SUBSTANCE	MOLECULAR WEIGHT	APPROX. ACTIVITY LEVEL	REMARKS
Acetylene Series			
Acetylene	26.04	3	Welding, Cutting
Propyne	40.06	4	
Butyne	54.09	4	
Pentyne	68.11	4	
Hexyne	82.14	3	
Ethylene Series			
Ethylene	28.05	3	Illuminating Gas, Anesthetic
Propylene	42.08	4	Coal Gas
Butylene	56.10	4	
Pentylene	70.13	4	
Hexylene	84.16	3	
Heptylene	98.18	4	
Octalene	112.21	4	
Benzene Series			
Benzene	78.11	4	Bensol, Paint Solvent & Remover
Toluene	92.13	4	Manufacture of TNT
Xylene	106.16	4	Solvent
Other Substances			
Isoprene	68.11	4	Solvent
Turpentine	136.23	4	
Naphthalene	128.16	4	Moth Balls
Phenol	94.11	4	Plastic Ingredient
Methyl Alcohol	32.04	3	Wood Alcohol
Ethyl Alcohol	46.07	4	Grain Alcohol
Propyl Alcohol	60.09	4	
Butyl Alcohol	74.12	4	
Amyl Alcohol	88.15	4	Fusel Oil
Cresol	108.13	4	Ingredient of Creosote, Wood Preservative
Menthol	156.26	4	
Formaldehyde	30.03	4	Disinfectant, Plastic Ingredient
Acetaldehyde	44.05	4	
Propionaldehyde	58.08	3	
Acrylaldehyde	56.06	3	Acroloin, Burning Fats
Butyraldehyde	72.10	4	
Valericaldehyde	86.13	4	
Crotonaldehyde	70.09	4	Solvent, Tear Gas

SUBSTANCE	MOLECULAR WEIGHT	APPROX. ACTIVITY LEVEL	REMARKS
Other Substances Continued			
Formic Acid	46.03	4	
Lactic Acid	90.08	3	Sour Milk
Acetic Acid	60.05	4	Vinegar
Propionic Acid	74.08	4	
Butyric Acid	88.10	4	Sweat, Body Odors
Valeric Acid	102.13	4	Sweat, Body Odors
Acrylic Acid	76.06	4	
Caprylic Acid	144.21	4	Animal Odors
Pamitic Acid	256.42	4	Palm Oil
Methyl Acetate	74.08	3	Solvent
Ethyl Acetate	88.10	3	Lacquer Solvent
Propyl Acetate	102.13	4	Lacquer Solvent
Butyl Acetate	116.16	4	Lacquer Solvent
Amyl Acetate	130.18	4	Lacquer Solvent
Acetone	58.08	3	Solvent
Methyl Ethyl Ketone	72.10	4	Solvent
Diethyl Ketone	86.13	4	Solvent
Dipropyl Ketone	114.18	4	Solvent
Methyl Ether	46.07	3	
Ethyl Ether	74.12	3	Ether-Medical
Propyl Ether	102.17	3	
Butyl Ether	130.23	4	
Amyl Ether	158.28	4	
Methyl Acrylate	86.09	4	Apt to Polymerize
Ethyl Acrylate	100.11	4	Apt to Polymerize
Methyl Mercaptan	48.10	4	Garlic, Onion, Sewer
Ethyl Mercaptan	63.13	4	Garlic, Onion, Sewer
Propyl Mercaptan	76.15	4	Garlic, Onion, Sewer
Eucalyptol	154.25	4	
Camphor	152.23	4	
Methyl Chloride	50.49	3	Refrigerant
Ethyl Chloride	64.52	4	Local Anesthetic
Propyl Chloride	78.54	4	Local Anesthetic
Butyl Chloride	92.57	4	Local Anesthetic
Methylene Chloride	84.94	4	
Chloroform	119.39	4	Anesthetic, Solvent
Carbon Tetrachloride	153.84	4	Cleaning Fluid, Solvent
Iodoform	393.78	4	Antiseptic
Phosgene	98.92	4	Poison Gas, Reagent
Pyridine	79.10	4	Burning Tobacco
Indole	117.14	4	Excreta
Skatole	131.17	4	Excreta
Nicotine	162.23	4	Tobacco
Nitrobenzene	123.11	4	Oil of Bitter Almonds, Oil of Mirbane

SUBSTANCE	MOLECULAR WEIGHT	APPROX. ACTIVITY LEVEL	REMARKS
Other Substances Continued			
Urea	60.06	3	Urine
Uric Acid	168.11	4	Urine
Putrescine	88.15	4	Decaying Flesh
Chlorine	70.91	3	May Partially Hydrolyze to HCL
Bromine	159.83	4	May Partially Hydrolyze to HBr
Iodine	253.84	4	May Partially Hydrolyze to HI
Hydrogen Fluoride (Hydrofluoric Acid)	20.01	3	Approximate Activity Levels Given Are for Dry Substances. In Presence of Water, Values are Approximately Doubled
Hydrogen Chloride (Hydrochloric Acid)	36.47	4	
Hydrogen Bromide	80.92	4	
Hydrogen Iodide	127.93	4	
Nitrogen Dioxide	46.01	4	May Partially Hydrolyze to HNO_3
(Nitrogen Tetraoxide)	(92.02)		
Nitric Acid	63.02	4	
Sulfur Dioxide	64.06	4	Oxidizes to SO_3
Sulfur Trioxide	80.06	4	Hydrolyzes to H_2SO_4
Sulfuric Acid	98.08	4	
Adhesives		4	
Ammonia		4	
Asphalt Fumes		4	
Automobile Exhaust		3	
Bathroom Smells		4	
Bleaching Solutions		3	
Cleaning Compounds		4	
Cooking Odors		4	
Hospital Odors		4	
Household Smells		4	
Jet Fuel Fumes		4	
Kitchen Odors		4	
Mildew		3	
Mold		3	
Ozone		4	
Paint and Redecorating Odors		4	
Smog		4	
Stale Odors		4	

NOTE: The activated carbon typically used by Blueair (before impregnation) is a coconut shell material with an activity level of 60% or more when tested with carbon tetrachloride.