Cartridges (1) For Stainless Steel Housings	Cartridges (1) For Aluminum & Plastics	Adsorbent Volume in Cubic Centimeters	Length (Inches)	End Caps/Seal	Flow at 100 PSIG
12-32-xx-TS	**TRE12-32-XX**	6	1.25″	Nylon/No Seal	5 SCFM
12-57-xx-TS	**TRE12-57-XX**	9	2.25″	Nylon/Buna-N	11 SCFM
25-64-xx-TS	**TRE25-64-XX**	20	2.50″	Nylon/Buna-N	15 SCFM
25-178-xx-TS	**TRE25-178-XX**	90	7.00″	Nylon/Buna-N	40 SCFM
38-152-xx-TS	**TRE38-152-XX**	130	6.00″	PVC/Buna-N	80 SCFM
51-230-xx-TS	**TRE51-230-XX**	220	9.00″	PVC/Buna-N	125 SCFM
51-476-xx-TS	**TRE51-476-XX**	530	18.75″	PVC/Buna-N	250 SCFM
63-762-xx-TS	**63-762-xx-TS**	1010	30.00″	PVC/Buna-N	560 SCFM

Notes: (1) Replace "xx" with adsorption required: CC, 4A, 13X, SG, DR, MB, PP, HO, SB, CS

Adsorbent	Code	Principles
Activated Carbon Cloth	**CC***	Adsorption of hydrocarbons and other organic vapors Zero Air Calibration
Molecular Sieve 4A	4A	Adsorption of CO_2, NH_3, H_2S, SO_X
Molecular Sieve 13X	**13X**	Adsorption of CO_2, NH_3, H_2S, SO_X, aromatics, amines
Silica Gel	**SG**	Adsorption of water vapor
Drierite - Anhydrous Calcium Sulfate	**DR**	Adsorption of water vapor
Mixed Bases	**MB**	Removal of acidic gases, CO_2, SO_X, NO_X, HCI
Potassium Permanganate	**PP**	Removal of SO_X, Hg, and other acidic gases
Hopcalite	**HO**	Removal of CO by catalytic oxidation to CO_2
Sodium Bicarbonate	**SB**	Acid Neutralizer
Copper Sulfate	**CS**	Removal of ammonia

Note: (*) Headline's **CC Adsorption Cartridges** are constructed entirely of highly adsorbent fibrous activated carbon formed into a strong, flexible cloth. This **carbon cloth** provides significantly greater dynamic adsorption capacity than granular carbon or carbon-impregnated media.

Unlike conventional charcoal materials, the **carbon cloth** maintains performance in moist conditions, exhibiting far less degradation when exposed to humidity. To prevent carbon dust carryover, the carbon cloth is fully encapsulated on both the upstream and downstream sides with a high-efficiency borosilicate glass microfiber layer.

For optimal performance and service life, carbon cloth adsorbers should be protected by **70C and 50C coalescing prefilters**. Under typical operating conditions, activated carbon can adsorb approximately **20–30% of its own weight** in contaminants.

Adsorbent	Final Numbers In Designation	Vapor Adsorption Activity	
		Good To Excellent Adsorption	**Little Or No Absorption**
Carbon	**CC**	Most C_4 and heavier hydrocarbons, ketones, alcohols, esters, ethers, organic acids, chlorinated organic, Freons, all aromatic hydrocarbons, carbon disulfide	Carbon monoxide, carbon dioxide, amines, ammonia, acetylene, most C_3 and lighter hydrocarbons, sulfur dioxide
Silica Gel	**SG**	Water vapor	Recommended only for water vapor adsorption
Molecular Sieve Type 4A	**4A**	Carbon Dioxide Ammonia Sulfur Dioxide Hydrogen Sulfide Acetylene Propylene Methane Ethane Water Vapor Ethylene Ethylene Oxide Carbon Disulfide	Organic compounds C_4 or larger, carbon monoxide
Molecular Sieve Type 13X	**13X**	All materials adsorbed by Type 4A Sieve plus: Methanol Straight Chain Mercaptans Freon 11 Freon 12 Freon 114 Sulfur Hexafluoride Straight Chain Hydrocarbons to C_{22} Cyclohexane Diphenyl Butene-1 Isopentane Benzone, Toluene, Xylene Boron Trifloride Triethylamine and Smaller Amines	Organic Compounds C_7 Or larger, Carbon Monoxide
Calgon Type HGR Sulfur –Impregnated Carbon	**CC-RD**	Mercury Vapor	Recommended only for mercury vapor adsorption
Mixed Sodium and Calcium Hydroxides	**MB**	All acidic gases, including: Sulfur Trioxide, Sulfur Dioxide, Nitrogen Dioxide, Carbon Dioxide, Hydrogen Sulfide, Hydrogen Chloride, Chloride, Phosphorus Chlorides	Inert and non-acidic gases
Potassium Permanganate Impregnated Aluminum	**PP**	Removal of SO_X in stack gas	

TABLE

Y	Denotes that chemical is Adsorb
N	Denotes No Adsorption
MB	Represents Mixed Bases
PP	Represents Potassium Permanganate

Chemical Substance	Formula	PP	MB	TLV (ppm)
Acetic Acid	CH_3COOH	Y	Y	10
Acetone	$CH_3CO\ CH_3$	Y	N	750
Acrylic Acid	$H_2C\ CH\ COOH$	Y	Y	
Alcohols	ROH (General)	Y	N	
Aldehydes	RCHO (General)	Y	N	
Allychloride	$H_2C\ CHCH_2Cl$	Y	N	1
Ammonia	NH_3	Y	N	25
Arsine	AsH_3	N	Y	0.05
Bromoform	$CHBr_3$	Y	N	0.05
Butyl Alcohol	$CH_3(CH_2)_2CH_2OH$	Y	N	50
Carbon Dioxide	CO_2	N	Y	5000
Carbon Oxysulphide	COS	N	Y	
Chloroform	$CHCl_3$	Y	N	10
Diacetone Alcohol	$CH_3COCH_2C(CH_3)_2OH$	Y	N	50
Diesel Fuel	General Hydrocarbons	Y	N	
Esters	General	Y	N	
Ethers	ROR (General)	Y	N	
Ethyl Acetate	$CH_3COOC_2H_5$	Y	N	400
Ethyl Alcohol	C_2H_5OH	Y	N	1000
Ethyl Benzene	$C_6H_5C_2H_5$	Y	N	100
Ethylene	C_2H_4	Y	N	
Formaldehyde	HCHO	Y	N	1
Formic Acid	HCOOH	Y	Y	5
Gasoline	Hydrocarbon Mixture	Y	N	100
Hydrogen Chloride	HCl	N	Y	5
Hydrogen Cyanide	HCN	N	Y	10
Hydrogen Sulphide	H_2S	Y	Y	10
Ketones	R_1COR_2 (General)	Y	N	
Mercaptans	RSH (General)	Y	Y	
Methyl Alcohol	CH_3OH	Y	N	200
Methyl Chloroform	$CH_3C\ Cl_3$	Y	N	
Methyl Ethyl Ketone	$CH_3COC_2H_5$	Y	N	
Nitrogen Oxides	NO_X ($NO+NO_2$)	NO oxidized	N	
Ozone	O_3	Decomposed	N	0.1
Petrols	Hydrocarbon Mixtures	Y	N	
Phenol	C_6H_5OH	Y	N	5
Phosphine	PH_3	Y	N	0.3
Pyridine	C_5H_5N	Y	N	5
Stibine	SbH_3	Y	N	
Sulphur Dioxide	SO_2	Y	Y	2
Toluene	$C_6H_5CH_3$	Y	N	100
Vinyl Acetate	$CH_3COOCHCH_2$	Y	N	10
Vinyl Chloride	CH_2CHCl	Y	N	5
Xylene	$C_6H_4CH_3CH_3$	Y	N	