

MULTI-MIX CHEMICAL MEDIA

GAS PHASE FILTRATION
INDUSTRIAL AND COMMERCIAL

TEBAF COMPANY LIMITED

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WHAT IS MULTI-MIX MEDIA ?

Multi-Mix is a proven filter media which provides continuous purification of corrosive, odorous and toxic contaminants in industrial and commercial environments. Multi-Mix media combines the adsorption properties of activated carbon with the oxidation properties of chemically impregnated alumina.

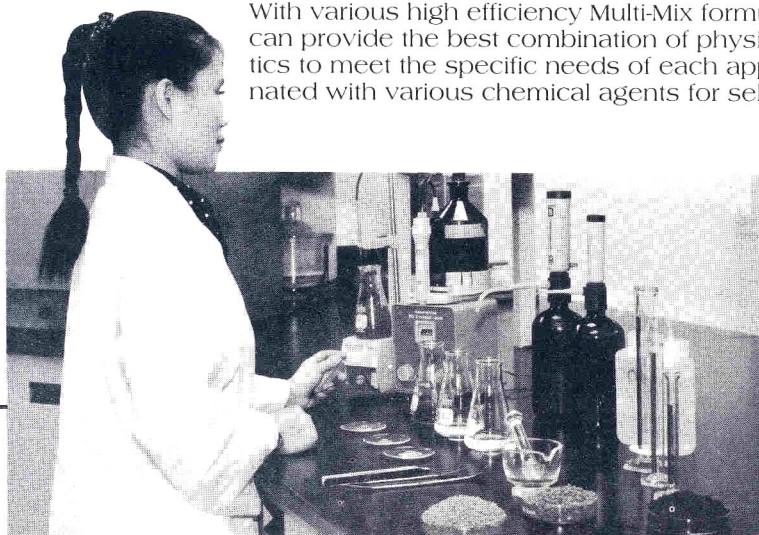
The Multi-Mix refers to four basic media types which have different chemical compositions:

MM-1000	MM-3000	MM-7000	MM-9000
The Multi-Mix MM-1000 is produced in 1/8" diameter spherical purple pellets and composed of activated alumina impregnated with potassium permanganate. The chemical reaction of the MM-1000 is very simple. The activated alumina collects odor molecules through adsorption and absorption. The odor molecules thereby come in contact with the potassium permanganate, which is evenly distributed throughout the pellets. The odor molecule is chemically oxidized to an odorless non-corrosive product.	The Multi-Mix MM-3000 consists of a coal based activated carbon of 1/8" diameter cylinders. Physical adsorption removes the gas molecules, which is a form of condensation. Activated carbon is used for a wide range of contaminants with higher affinity to specific gases.	The Multi-Mix MM-7000 is manufactured in 1/8" diameter cylinders and consists of activated carbon impregnated with phosphoric acid. Phosphoric acid is impregnated into the carbon to provide enhanced efficiency and capacity for base type molecules. After adsorption, a chemical reaction follows to neutralize the contaminants.	The Multi-Mix MM-9000 is manufactured in 1/8" diameter cylinders and consists of activated carbon impregnated with potassium hydroxide. Potassium hydroxide is impregnated into the carbon to provide enhanced efficiency and capacity for acid type molecules. After adsorption, a chemical reaction follows to neutralize the contaminants.



A FORMULA FOR EACH APPLICATION.

With various high efficiency Multi-Mix formulas available, CIRCUL-AIRE can provide the best combination of physical and chemical characteristics to meet the specific needs of each application. Media can be impregnated with various chemical agents for selective performance.





CHEMICAL MEDIA SPECIFICATION

MEDIA TYPE: MM-1355

MM-1355 is a blend of MM-1000, activated alumina impregnated with potassium permanganate and MM-3000, coal based activated carbon. Refer to the specifications for MM-1000 and MM-3000 for product description. The standard blend for MM-1355 is 50% of MM-1000 and 50% of MM-3000 by volume. Therefore, the precise product description for the 50% blend is MM-1355. Custom blends are available for specific applications.

MM-1355 provides enhanced performance in controlling compounds usually controlled by MM-1000 and MM-3000 with the added benefit of protection for MM-1000 pellets from 'blinding' or crystallization. The combined benefits of both media may be realized in one bed.

COMBINED PROPERTIES

Apparent Density:	0.67 gm/cc 40 lb./cubic foot
Pressure Drop @ 100 fpm :	0.3 in. WC/in. of bed

PACKAGING

MM-1355 is available in 1 cu. ft. containers, 55 gallon fiber drums and 20 cu. ft. super sacks. Unless otherwise specified, MM-1355 is supplied in 1 cubic foot plastic lined corrugated containers.

SAFETY PRECAUTIONS

Do not heat or rub in contact with easily oxidizable matter. Keep away from heat and flammable materials. Handle in a well-ventilated area. Sweep up unused material in refuse container. Dispose of in accordance with provincial, federal, state and local regulations.

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CHEMICAL MEDIA SPECIFICATION

MEDIA TYPE: MM-1000

MM-1000 is a pelletized activated alumina impregnated with potassium permanganate for enhanced performance in removing H₂S, SO₂ and NO₂ from air streams.

TYPICAL PROPERTIES

H ₂ S Capacity (minimum):	.10g H ₂ S/cc
Moisture:	15 wt%
Crush Test:	32 wt%
Particle Diameter:	3.5 mm (6 mesh)
Substrate Surface Area:	250 m ² /g
Shape:	Spherical Pellet
Apparent Density:	.80 g/cc, 50 lb./ft ³
Pressure Drop @ 50 fpm :	1.0" of water/ft. of bed

PACKAGING

MM-1000 is available in 1 cu. ft. containers, 55 gallon fiber drums and 6 cu. ft. or 20 cu. ft. super sacks.

SAFETY PRECAUTIONS

Workers should follow federal, provincial and state safety guidelines for entering oxygen depleted areas.

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CHEMICAL MEDIA SPECIFICATION

MEDIA TYPE: MM-9000

MM-9000 is an impregnated pelletized activated carbon designed for effective removal of acid gases such as H₂S, SO₂, CL₂ and HC1 from contaminated air streams. It is manufactured from a unique bituminous coal substrate. MM-9000 has low pressure drop and high adsorptive capacity.

TYPICAL PROPERTIES

H ₂ S Capacity (minimum):	0.16g H ₂ S/cc
Moisture:	15 wt%
Hardness:	95 wt%
Particle Diameter:	3 mm
Substrate CTC:	70 wt%
Substrate Surface Area:	1250 m ² /g
Shape:	Pellet
Apparent Density:	0.61 g/cc, 38 lb./ft. ³
Pressure Drop @ 50 fpm (0.25 m/s):	1.7" of water/ft. of bed, 900 Pa/m

PACKAGING

MM-9000 is available in 1 cu. ft. containers, 55 gallon fiber drums and 6 cu. ft. super sacks.

SAFETY PRECAUTIONS

Wet activated carbon readily adsorbs atmospheric oxygen. Dangerously low oxygen levels may exist in closed vessels or poorly ventilated areas. Workers should follow federal, provincial and state safety guidelines for entering oxygen depleted areas.

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CHEMICAL MEDIA SPECIFICATION

MEDIA TYPE: MM-7000

MM-7000 is a pelletized activated carbon impregnated for enhanced performance in removing basic gases such as NH_3 from air streams. It is manufactured from a unique bituminous coal substrate. MM-7000 has low pressure drop and high adsorptive capacity.

TYPICAL PROPERTIES

NH ₃ Capacity (minimum):	.05g NH ₃ /cc
Moisture:	15 wt%
Hardness:	95 wt%
Particle Diameter:	4 mm
Substrate CTC:	60 wt%
Substrate Surface Area:	1000 m ² /g
Shape:	Pellet
Apparent Density:	.55g/cc, 35 lb./ ft. ³
Pressure Drop @ 50 fpm:	1.8" of water/ft. of bed

PACKAGING

MM-7000 is available in 1 cu. ft. containers, 55 gallon fiber drums and 20 ft.³ super sacks.

SAFETY PRECAUTIONS

Wet activated carbon readily adsorbs atmospheric oxygen. Dangerously low oxygen levels may exist in closed vessels or poorly ventilated areas. Workers should follow federal, provincial and state safety guidelines for entering oxygen depleted areas.

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CHEMICAL MEDIA SPECIFICATION

MEDIA TYPE: MM-3000

MM-3000 is a pelletized activated carbon for removing a variety of organic compounds. It is manufactured and activated from a unique bituminous coal substrate. MM-3000 has low pressure drop and high adsorptive capacity.

TYPICAL PROPERTIES

Moisture:	2 wt%
Hardness:	95 wt%
Particle Diameter:	3 mm
Substrate CTC:	70 wt%
Substrate Surface Area:	1000 m ² /g
Shape:	Pellet
Apparent Density:	30 lb./ft ³
Pressure Drop @ 50 fpm (.25 m/s):	1.7" of water/ft. of bed, 900 Pa/m

PACKAGING

MM-3000 is available in 1 cu. ft. boxes, pails and 6 cu. ft. or 20 cu. ft. super sacks.

SAFETY PRECAUTIONS

Wet activated carbon readily adsorbs atmospheric oxygen. Dangerously low oxygen levels may exist in closed vessels or poorly ventilated areas. Workers should follow federal, provincial and state safety guidelines for entering oxygen depleted areas.

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INDUSTRIAL AND COMMERCIAL APPLICATIONS.

Multi-Mix is used to control corrosive gases such as SO_2 , H_2S , Cl_2 and NH_3 which attack delicate process control equipment in heavy industry. In light industry, it is used to eliminate malodorous and nuisance odors which affect people's health and well-being.

Multi-Mix is very efficient in the commercial and institutional sectors where air-borne contaminants are created from human activities, operating equipment, furniture, construction materials and outdoor contaminants. A controlled environment will protect people's health and improve their comfort and productivity.

Suitable for:

- Outdoor air requiring purification.
- Recirculated air requiring filtration.
- Exhaust air requiring purification due to environmental regulations.

Heavy industry	Light industry	Commercial and institutional sectors
Pulp & Paper • Refineries • Petro-Chemical • Power Generation • Mining	Sewage Treatment Plants • Laboratories • Pharmaceutical	Office Buildings • Hospitals • Museums • Schools • Cafeterias

ADVANTAGES OF MULTI-MIX.

Versatile	Adapts to multiple applications and air conditioning or filtration equipment, industrial and commercial, new or retrofit. Easy accommodation for future changes in building layout and/or activities.
Simple & Reliable	Does not require complex maintenance procedures.
Energy Saving	Utilizes recirculated air which reduces outside air requirements.
High Efficiency	High removal efficiency in multiple contaminant environments.
High Removal Capacity	Deep bed equipment configurations are available for longer life.

PHYSICAL PROPRIETIES.

1.	Superior Crush Strength	Due to proprietary production procedures, Multi-Mix media pellets are uniform and of a high crush strength. Their dusting threshold is higher, thus abrasion loss is kept to a minimum.
2.	Superior Pore Structure	Continuous advances in production procedures has resulted in the highest possible level of media porosity. This provides more vacancy for the migration of contaminants, higher sustained efficiency and longer effective life.
3.	Superior Retentivity	Multi-Mix media MM-1000, MM-7000 and MM-9000 do not desorb contaminants under surge conditions or sudden temperature/humidity changes.
4.	Temperature Range	From -40°F to 120°F From -40°C to 48.9°C
5.	Humidity Range	From 10% to 95%
6.	Contamination Concentration	From 0 to 25 ppm

TECH-CHEK PROGRAM.

Analytical follow-up through our Tech-Chek Program is one of the many services offered by CIRCUL-AIRE. To ensure maximum efficiency of our products, a report establishing media consumption rate and performance will be provided.

PACKAGING.

Multi-Mix media is packaged in 1 cubic foot carton boxes. As an option, the media can be packaged in plastic pails.

Other configurations are available:

- 5 lb. (2.5 kg) pails
- 7.0 cu. ft. drum to 2000 lb. (910 kg) Super Sacs.



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