



YOUR SPECIALIST SUPPLY PARTNER

PURAGEN ACTIVATED CARBON

BEVERAGES

Puragen Activated Carbon products purify beverages to make them look and taste better. Fruit juices achieve their light, crisp look and taste by removing colour bodies and impurities such as patulin. White zinfandel's signature pink colour comes from activated carbon filtration, and distilled spirits such as rum, whiskey and vodka are enhanced by the removal of taste and odour compounds. Beer-based malternatives are stripped of flavour and colour to produce malt-based tea, wine or lemonade flavoured alcoholic beverages. Puragen Activated Carbon offers a wide variety of products for beverage purification that meet the highest quality standards required for food applications.

SWEETENERS

Sweeteners come from a variety of origins and each type has its own purification requirements. Sugar cane, for instance, only becomes white granulated sugar after large colour bodies like melanoidins and caramels are removed. Similarly, liquid sugars are perfected when "off" tastes and odours are removed. Starch based sweeteners, like glucose, dextrose, maltose and fructose, and artificial sweeteners have their own treatment requirements. Due to the variation in treatment objectives and application requirements, Puragen Activated Carbon offers a wide variety of products to meet your specific purification challenges.

ORGANIC CHEMICALS

Many of today's industrial chemical process facilities require the separation and purification of organic chemicals either in the final product or in process unit operations. Activated carbon is used in many of these separation and purification processes to remove unwanted reaction by-products or contaminants that may cause undesirable colour, reduced shelf life, or result in poor performance of the final products. Common organic chemicals using Puragen Activated Carbon products for purification can be synthetic organic chemicals such as fatty acid esters or biochemical such as amino acids such a citric acid, and MSG.

INORGANIC CHEMICALS

Similar to organic molecules, many of today's industrial facilities require the purification of inorganic chemicals either in the final product or in process unit operations. Operations that rely on activated carbon purification properties include the processing of minerals produced from mining ores such as trona (sodium carbonate) or phosphate in the production of phosphoric acid. Puragen Activated Carbon products have been used in many of these purification processes to remove unwanted by-products or contaminants that may cause undesirable colour, off tastes, reduced shelf life, or poor performance.

Filchem Australia's dedicated customer support
1800 331 125 | sales@filchem.com.au | www.filchem.com.au



YOUR SPECIALIST SUPPLY PARTNER

PURAGEN ACTIVATED CARBON

SOLVENT RECOVERY

Many industrial processes use organic solvents in the production of their products. These solvents need to be captured to prevent emissions into the environment or recovered for re-use. Puragen Activated Carbon is used as part of solvent recovery systems that pass solvent laden air (SLA) through the activated carbon bed to adsorb organic solvents. Once the carbon bed becomes exhausted, the solvent recovery process will switch from adsorption mode to a desorption mode to regenerate the activated carbon media. In some processes the activated carbon life cycle can last many years before it must be replaced.

Solvent recovery systems can vary by design and are typically installed with more than one adsorber so that one bed can be regenerated while the others are in adsorption mode. Solvent recovery processes can be employed for single organic solvents as well as multi-component solvent systems. Single component systems in many cases adsorb and recover the solvent for re-use. Multi component systems typically adsorb and then destruct the organic as it is difficult to separate multi-organic solvents.

Puragen Activated Carbon products for this application are commonly large mesh granular or extruded pellets to minimize pressure drop across the bed. The specific properties of the activated carbons can vary with pore volume, pore size, density, purity, and hardness. Our technical experts guide you through the application to help you select the appropriate carbon for your specific application.

GENERAL FILTRATION

Many of today's industrial facilities, chemical processes, new furniture, kitchen exhaust, and a variety of other point sources produce gases which can be offensive and irritant as well as potentially cause operational and health problems. These problems can lead to thousands of hours of downtime, lost labour hours, and millions of dollars of lost revenue.

Airborne contaminants may be organic or inorganic and may require specialty treated activated carbons to either physically adsorb or chemisorb these contaminants. Many organic compounds are physically adsorbed such as common solvents, methyl disulfides, and mercaptans. Inorganic and some organic compounds will also need to be controlled by chemisorption. This means that the contaminant reacts with a specially selected surface chemical to form a non-toxic substance to remove it from the air stream. Examples of inorganic contaminants are acid gases such as hydrogen sulfide and chlorine dioxide or strong odours such as ammonia.

Puragen Activated Carbon products are specially designed for a wide variety of General Air Purification applications. Our technical experts provide guidance on selection of virgin activated carbons and specially treated activated carbons to protect or remove these point source contaminants.



YOUR SPECIALIST SUPPLY PARTNER

PURAGEN ACTIVATED CARBON

ODOUR CONTROL

For industrial and waste treatment plants sewage treatment plants and oil refineries where, foul odours can be harmful to human health or unpleasant to the facility's neighbours, odour control technology is critical. Odors can result from organic or inorganic contaminants and may require specialty treated activated carbons to either physically adsorb or chemisorb these compounds. Many odours that are organic based are physically adsorbed such as common solvents, methyl disulfides, and mercaptans. Inorganic and some organic compounds will also need to be controlled by chemisorption. This means that the contaminant reacts with a specially selected surface chemical to form a non-toxic substance to remove it from the air stream. Examples of odours from inorganic contaminants are acid gases such as hydrogen sulfide and chlorine dioxide or strong odours such as ammonia. Puragen Activated Carbon offers standard, and specialty treated products in both granular and extruded sizes that provide high-efficiency odour reduction.

DRINKING WATER

Rivers, lakes, and groundwater aquifers provide our drinking (potable) water, which must be treated to make it safe to drink. Activated Carbon is regarded as one of the best treatment technologies for removing many impurities from drinking water. Just as water is recycled and purified in nature, it can be treated in man-made systems to remove unwanted contaminants. Puragen carbons in both granular activated carbon (GAC) and powdered activated carbon (PAC) forms are used by water treatment facilities to treat potable water. Puragen GAC products are placed in gravity or pressure filters and the water passes downward through the GAC. Puragen PAC products are usually added after the raw water intake or before the coagulation / flocculation stage. Puragen PAC dose rates can be varied depending upon the amount of contaminants present. Puragen Activated Carbon products are used to reduce naturally occurring organic matter (NOM) such as total organic carbon (TOC), taste and odor compounds (T&O) like MIB and geosmin from algae, and manmade contaminants like pesticides and herbicides. Puragen offers a wide variety of activated carbons to meet your specific purification challenges.

POINT OF USE (POU) AND POINT OF ENTRY (POE)

Potable water is treated to remove unwanted contaminants, but trace levels on the contaminants may remain. The most common disinfectants, chlorine and monochloramine remain in the water, which can cause taste and odour issues. In addition, the use of these disinfectants may form undesirable chemical byproducts which can lead to health issues. Point of use (POU) and point of entry (POE) systems are used to further treat potable water that comes from water treatment facilities. Puragen granular and powder carbons are used in POU and POE systems to remove free chlorine, monochloramines, (NH₂Cl), volatile organic compounds (VOC), disinfection by-

Filchem Australia's dedicated customer support
1800 331 125 | sales@filchem.com.au | www.filchem.com.au



YOUR SPECIALIST SUPPLY PARTNER

PURAGEN ACTIVATED CARBON

products like total trihalomethanes (TTHM), total organic carbon (TOC) and undesirable taste and odours (T&O). Point of use filters include faucet mounted, under the sink, and pitcher. Point of entry systems treat potable water as it enters residential, commercial or industrial buildings.

WASTEWATER

Wastewater is generated from residential, commercial and industrial operations. Wastewater contains a mixture of many different impurities at high concentrations. The levels of these impurities need to be reduced so the wastewater can be safely discharged into the environment. Many traditional treatment processes like flocculation, sedimentation, and biological treatment are used to reduce the levels of impurities in wastewater. Puragen Activated Carbon products provide additional removal capabilities to wastewater systems. Puragen powdered activated carbon (PAC) is added to aerobic biological treatment processes (activated sludge/PACT) to adsorb toxic impurities, aid in foam reduction, aid in solids setting, and improved BOD and COD removal. Puragen granular activated carbon (GAC) is normally used as a polishing step to reduce impurities such as colours, dyes, chlorinated/ halogenated organics, aromatic organics and pesticides that remained after traditional treatment methods.