

CL ALOX 6

Potassium permanganate



Purpose of use

CL ALOX 6 is a reliable filtering material for the elimination of odours and gas-based impurities. Its applications include wood processing industry, hospitals, sewage treatment plants, museums, petrochemical industry and offices.

Materials

The product consists of activated aluminium oxide (Al_2O_3) impregnated with potassium permanganate (KMnO_4). It is produced in pellets, and is purple in colour.

The pellets are inorganic, non-toxic and non-flammable (UL grade 1).

Applications

1) Dynamic systems consisting of filters or other units mounted in the air flows of air-conditioning and ventilation systems, central heating systems, range hoods or portable air purification units.

2) In permanent conditions small filters or packages can be mounted in identified odour points (toilets, florists, basements, refrigerators), where normal diffusion and convection flows carry the odour molecules over the pellets. The pellets are based on the two oldest proven methods for management of gas concentration: sorption and oxidation. The elimination of impurities starts with adsorption and absorption of molecules. After this, the potassium permanganate in CL ALOX 6 acts as an oxidiser and chemically destroys the accumulated impurities. This chemical oxidising is called controlled oxidising as the method based on pellet form converts sulphur-containing gases, such as hydrogen sulphide and sulphur oxide into inorganic non-volatile sulphides and sulphates. These materials are retained in the porous drop structure. Oxidising involves no high temperatures or combustion, contrary to burning oxidising methods. This makes it a unique system.

Oxidising of odours

Aluminium oxide adsorbs and absorbs both humidity and chemical impurities. The adsorbed impurities accumulate on the external surface and interfaces of the pellets, while absorbed impurities penetrate into the core of the pellets. Humidity decomposes the permanganate, which in turn oxidises both the adsorbed and the absorbed chemical impurities. The permanganate goes through several oxidising stages before it is depleted and turns into brown manganese dioxide. As the amount of permanganate on the external surface of the pellet is reduced as a result of the indirect oxidising reaction, the surface colour of the pellet begins to change. Gradually it turns from light to dark brown with the colour proceeding from the surface into the core as the chemical oxidising capacity is depleted. In an analysis performed on the filtering material when the pellets turn brown for the first time, it can be seen that they still have about 80% of their capacity left.

Quality and environment

Operations are guided by the ISO 9001:2001 quality certificate and the ISO 14001 environmental certificate.

Technical data

size

3.5-4.5 mm pellet

raw material

activated aluminium

area

ca 250 m²/g

apparent density

0.80 g/cm³

moisture content

max 15 % w/w

impregnation

potassium permanganate (available in 4%, 5% and 8 %)

package size

23.7 kg box

application

filtering material for gases and liquids