1°) TECHNICAL DATA FTM 1000 OXYGEN ABSORBER

REFERENCE	TYPE	capacity ml absorbed oxygen	DIMENSIONS	Pouch	Carton	Pallet 120 X 100 50 cartons
V11006	ATCO FTM 1000/50	1000	80 x 80 mm	50	500	25000

Composition:

Packaging: Polypropylene complex, unwoven, PET printed. The printed text mentions in several languages the advice not to swallow.

Contents: Mixing of mineral active matters iron and iron-oxidebased; no risk of toxicity even in the case of accidental ingestion.

2°) RATE OF OXYGEN ABSORPTION

Subject to validation of the use terms of our products by our technicians and subject to the respect of the normal use terms stated in the present data sheet, the ATCO FTM 1000

sachets enable to reach values below 0.1 % within 48 hours at an ambient temperature (20°C).

The rate of oxygen absorption is in fact dependent upon the temperature. The higher it is, the quicker the reaction is. This absorption process being by itself exothermic.

3°) AREAS OF APPLICATION

ATCO FTM 1000 is used in museums for the pest control of the works of art or the transfer and the preservation of theworks with a view to a future exhibition or a restoration.

ATCO FTM 1000 is used indifferently in wet or dry microatmospheres.

ATCO FTM 1000 will be preferred all the times it is needed toavoid an important variation of hygrometry in the chamber containing the works to be treated.

ATCO FTM 1000 has been especially designed in order to that the oxygen absorption reaction is little exothermic and more especially in order to that it influences as less as possible the relative humidity in the treatment chamber.

DIRECTIONS FOR USE

4°) PRECAUTIONS TO BE TAKEN

Oxygen absorption is an exothermic process. Any misuse of oxygen absorbers may lead to an excessive temperature of ATCO sachets and a release of humidity in the treated volume. Therefore, it is strongly

recommended that the use of multiple oxygen absorbers in the same volume is conducted by a trained person.

Opening large volume without oxygen must be done carefully (risk of suffocation). The ATCO oxygen absorbers should be used for products packed in little oxygen permeable packing (20 cc/square metre/24 hours/max atm) and perfectly sealed.

It is then necessary to choose well the packing materials while taking into account not only their permeability to oxygen but also their welding.

The quality of the welding is in fact determining for the real airtightness of the packing. The absorber ATCO FTM 1000 has to be put into a packaging designed on such a way that the air can circulate all over the volume.

If exposed to long to anhydrous atmosphere, it might deteriorate its absorption capacity.

Not designed for microwaves application (iron based !)

Packed under partial vaccum.

IMPORTANT:
The absorbers must be divided up on a flat surface immediately prior to use and not stacked in piles as the absorption process is exothermic and temperature rise within the stack will increase the rate of absorption and lower the performance of the absorbers. The maximum time between removing from the vacuum pack and sealing within the final product is 1 hour at 22°C for ATCO FTM 1000 with a relative humidity between 40 et 99 % . Should be used by a trained technician for anoxic traitment.

5°) CALCULATION OF THE VOLUME OF OXYGEN TO BE ABSORBED

5.1. Calculation of the volume of oxygen to be absorbed in the packaging of the end product after its packing.

It can be given in ml by the following formula:

$$A = (V - P) \times 21 / 100$$

V= volume of the finished pack determined by submersion in water given in ml

P = weight of the finished pack in g.

21 % = amount of oxygen in the air. This figure must be corrected after testing when a scanning or a substitution by compensated vacuum is carried out.

5.2. In addition, it is necessary to calculate the volume ofoxygen likely to permeate through the packaging during the duration of the treatment.

This quantity in ml may be calculated as follows:

B = S X P X D

S = surface area of the pack in sq metres.

P = permeability of the packaging given in ml oxygen/sq.m/24h/atm. (obtainable from the packaging supplier).

D = Duration of the treatment in days

5.3. Quantity of ATCO FTM 1000 sachets to be used

The quantity of ATCO sachets to use by packaging will be equal to:

$$n = (A + B)/1000$$

Of course, the result should be rounded off to the superior whole number and, possibly, it would be necessary to foresee a safety margin since the calculation is not always accurate enough; it does not take into account, for example, the variations in permeability to oxygen according to the humidity, and the differences at this level can be very important for some polymers (EVOH), neither the abnormal permeability which can exist at the level of the welding if not of a perfect quality.

6°) SAFETY

The ATCO absorbers are made from non toxic materials but are not intended to be eaten. They may be disposed of without difficulty within normal domestic refuse.

Its belongs to the user to check if the use of the absorbers is in conformity with effective regulations.

In the European Community, the absorbers are subjects to the EU regulations CE 1935/2004 and CE/450/2009 either they are in contact with a food.

7°) STORAGE

The ATCO oxygen absorbers must be stored in a well ventilated area to avoid any risk of oxygen depletion.

At ambient temperature, the ATCO absorbers can be kept for at least one year without modification in their performance as well with regard to the capacity as to the rate of absorption.

8°) MEANING OF THE BATCH NUMBER

The batch number is made up of 12 figures: EX 20120434/205

- the first four figures for the year 2012

- 2 figures for the setting up week 01

- 1 figure for the setting up day 3

- 1 figure for the machine number 4

- 1 dash -

- 1 figure for the team number 2

- 2 figures for the order production number 05