PRODUCTION OF GAS-TIGHT POCKETS: general information
for static anoxic treatments

GENERAL PRINCIPLE
Oxygen scavengers are intended for packaging objects in gas-tight pockets in order to limit oxidation phenomena during long-term storage or to fight harmful insects by asphyxiation.

EXECUTION INSTRUCTIONS
The pockets must be heat-sealed in special materials, reputed to be impermeable to oxygen and whose performance is certified by tests carried out in public laboratories.

The practical production of the pockets requires a great care and can be considerably facilitated by the use of heat pliers sealing machine specially designed for this purpose. Perfectly adapted films are supplied for example by the French film manufacturer VALSEM (snec). They are temperature adjustable and can also seal other types of film.

Several types of film can be used, but the VALSEM S165 opaque film is less expensive and more waterproof than the transparent films which come from abroad like Marvelseal 360 or Filmpack 1193.

The manufacture of bags in large quantities can be considered in the context of moves or future storage in reserve. Sensitive materials which could be harmed by toxic treatment are primarily concerned by this type of packaging which has the advantage of being able to be maintained in a durable manner. To this end, the calculations making it possible to evaluate the number of sachets of oxygen scavengers to be introduced into each pocket were carried out on the basis of a possible storage of 10 years.

The person in charge of the pockets will have to wait for his instructions from the Conservation who will have previously checked the inventory numbers and the existence of photographic documents. A self-adhesive label will be prepared in advance and will constitute in a way the "good to pack". It must specify at least the following points:

denomination   inventory number   packaging date
foreseeable opening date   place of destination   fragility

as well as any other information deemed useful by the conservation team.

PRODUCTION OF GAS-TIGHT POCKETS: procedure
for static anoxic treatments

Person in charge:

EXECUTION INSTRUCTIONS

- **never undertake a gas-tight pocket without self-adhesive labels and without validation of the person in charge,**

- the person in charge of the scavengers is the only one authorized to calculate the number of sachets to be inserted into the pockets,

- write on a dashboard the following indications provided on the label:
  denomination   inventory number

- note the dimensions of the pocket and deduce the volume Air V cm3:
  height or thickness cm   length cm   width cm   volume cm3

- calculate the volume of oxygen O2 V to be absorbed by dividing the volume Air V by 5 (since ambient air contains 20.9% oxygen and the actual volume is reduced by the presence of the items to be treated),

- calculate the number of scavengers sachets to insert in the pocket by reporting on the ATCO table the volume of oxygen O2 V cm^3 (without decimal) :

V m3	Air V cm3	O2 V cm3	ATCO 400	ATCO 1000	ATCO 3000
Package volume		Air V/5	Nb of sachets according to the volume of oxygen		
0,0025	2500	500	2	1	1
0,005	5000	1000	3	1	1
0,0075	7500	1500	4	2	1
0,01	10000	2000	5	2	1
0,015	15000	3000	8	3	1

- record on the dashboard these indications, as well as the dimensions of the film necessary to manufacture the pocket:
  O2 V (V/5)   number and grade of ATCO   film dimensions

- wrap the object in tissue paper and possibly introduce it into a rigid structure or a cardboard reinforcement (indications provided on the label),

- cut the film and make a first weld around the object, leaving one or two entrances for the absorber bags (stick the label on the top at this time),

- proceed in the same way for the preparation of about ten objects,

- open a packaging of scavengers and spread out on a table the number of sachets necessary for the prepared objects (immediately store the unused sachets by heat-sealing the packaging),

- introduce the sachets into the pockets and close by heat sealing with the heating tongs (**you have one hour for the whole operation**).

NB : objects must not come into contact with the sachets of scavengers