

ECONO-PRESS AND ECONO-MOUNT

0026-001 AND 0026-500

PRODUCT DESCRIPTION

The ECONO-PRESS is an economical die used to form KBr pellets for solid samples in infrared spectroscopy. The Model 0026-500 consists of three parts: one barrel (Pellet Form) and two polished forming bolts.



ECONO-PRESS with
ECONO-MOUNT: P/N 0026-001

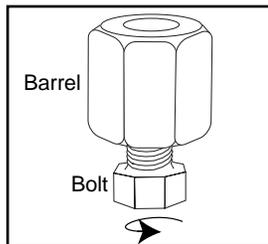


Figure 1 - Insert Bolt and place in upright position.

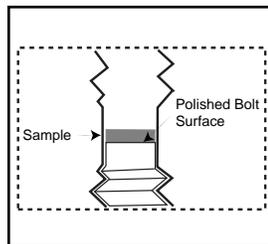


Figure 2 - Close-up of sample inside Barrel chamber.

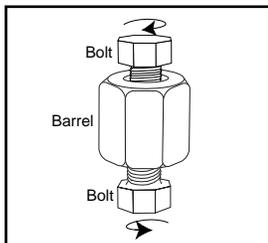


Figure 3 - Full assembly of ECONO-PRESS.

CARE OF ECONO-PRESS

There can be traces of machining oil present on the ECONO-PRESS when you first receive it.

Thoroughly clean the Bolts and Barrel with a suitable solvent.

- Keep the parts clean and dry when not in use.
- Protect the polished faces of the bolts from scratches.
- Only assemble when sample separates the polished surfaces or a piece of cardboard can be used for storage.

SAMPLE PREPARATION

Use dry, spectroscopic quality Potassium Bromide (KBr) as a matrix.

Other materials such as Potassium Chloride, Sodium Chloride and Cesium Bromide can be used for special applications.

High quality KBr pellets can be formed with 50 to 100 mg of material, while the minimum amount of matrix required to form a good pellet is 25 mg.

Thoroughly grind approximately 0.1 to 10 mg of solid sample with a mortar and pestle or a mechanical mill (Wig-L-Bug).

Add approximately 100 mg of KBr and regrind to uniformly mix the sample in the matrix.

Soluble samples may be taken up in a small quantity of solvent (approximately 0.5 mg in 0.5 ml of acetone or suitable solution) and deposited onto about 100 mg of KBr. Evaporate the solvent to prepare the matrix for pressing.

OPERATION

1. Insert one bolt into the barrel (*Figure 1*). Advance carefully in a clockwise direction until the bolt end is halfway into the chamber.
2. Add sample/KBr to chamber and gently shake to level sample (*Figure 2*).
3. Insert the second bolt into the barrel and tighten by hand (*Figure 3*).
4. Use two 3/4" box wrenches and gradually tighten bolts. A bench vise can be used to assist in this procedure.
5. Apply pressure for one minute, then remove bolts.

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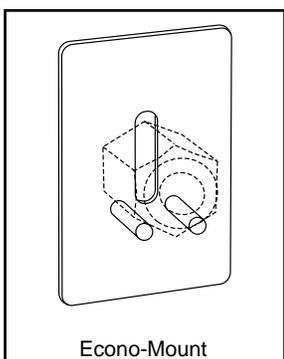


Figure 4 - ECONO-MOUNT displaying Barrel placement.

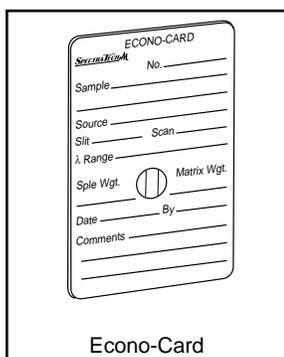


Figure 5 - ECONO-CARD

DETERMINATION OF SPECTRUM

Analysis can be performed by two methods:

Pellet in the Barrel Chamber

1. To analyze the pellet in the barrel chamber, place the ECONO-MOUNT in the slide mount of the spectrometer sample compartment (Figure 4).
2. Place the barrel on the ECONO-MOUNT. Be sure the sample is in the beam path.
3. Run spectrum.

After analysis, the pellet can be removed by pushing it out with a pointed instrument or dissolved in water.

Pellet on the ECONO-CARD

1. To eject the pellet, remove one bolt and slightly tighten the other bolt to loosen the pellet.
2. Mount the pellet onto adhesive strips of the ECONO-CARD.
3. Place the ECONO-CARD in the slide mount of the spectrometer compartment. Be sure the sample is in the beam path (Figure 5).
4. Run spectrum.

The card with the mounted sample can be used for archival reference or disposed of.

COMMON PROBLEMS:

The pellet should exhibit high visible clarity when properly formed. Commonly occurring faults in pellet formation can be classified into those due to the powder and those due to faulty use of the press.

The foregoing list of faults refers to pellets of pure halides, with normal mixtures of 0.1 to 10% sample. Pellets might be only translucent, depending upon the nature of the sample. It is helpful if all of the ECONO-PRESS components are kept warm (50°C) to prevent fogging of the pellet due to atmospheric moisture.

- A. Cloudy appearance of the pellet and unwanted water bands in the spectrum; the KBr powder is not dry.
- B. Isolated white spots; caused by few coarse grains in fine powder. More even grinding is needed.
- C. Pellet opaque over part of area; due to insufficient pressure or uneven distribution. Repress with better distribution of sample and matrix.
- D. Pellet flakes; due to excessive grinding of powder. Grind fresh material for shorter period.
- E. Pellet scatters energy at short wavelength; large particle size. Further grinding of powder and sample is necessary.

CLEAN UP

After use, rinse the barrel and bolts with water or some suitable solvent to remove remaining sample material. Thoroughly dry all parts in order to prevent corrosion and contamination of subsequent pellets.

ORDERING INFORMATION

PART NUMBER

0026-500

0026-001

0026-017

0016-015

0016-031

DESCRIPTION

Econo-Press and instructions only

Econo-Press, Econo-Mount, ten 10 mm Econo-Cards, and instructions

10 mm Econo - Cards, package of 100

KBr Powder - 100 grams in bottle

KBr Powder Packets - package of 100