

# ACTIVATED CARBON SAMPLE KIT FOR EARLY DRUG DEVELOPMENT

## Benefits

- ◆ Activated carbon grades for adsorption of colorants, metals and process impurities
- ◆ Purify and synthesize more lead compounds in less time
- ◆ Maximize yield of target compounds while selectively removing unwanted impurities
- ◆ Improve efficiency by having convenient benchtop sample kit close at-hand
- ◆ Six high purity, half liter samples offered free-of-charge

## Challenge and solution

In early drug development, process chemists in Chemical Research & Development departments are responsible for developing and optimizing a synthetic scheme and pilot procedure to scale-up promising lead compounds for clinical trials. Process chemists strive to maximize yield of the lead compound, while simultaneously removing unwanted impurities, including: 1) light, medium and dark colors; 2) metals including palladium, platinum, rhodium and ruthenium; and 3) process-related contaminants. Process chemists need to define a chemical process that is safe, reproducible and cost-effective.

It is almost impossible to predict which activated carbon grade will work best at removing unwanted impurities for any given sample. For this reason, we created a sample kit (Figure 1) for the pharmaceutical market containing six high purity activated carbon grades with unique selectivity for removing a range of the most common impurities (Figure 2).

The convenient design is ideal for placement on a laboratory benchtop. For each new sample, we recommend that process chemists try one chemically activated carbon and one steam activated carbon to determine which type works best, then optimize the purification method further by trying other grades in the kit.



Figure 1. Activated carbon sample kit for the pharmaceutical market

| For the removal of  | Product                | Type      | Activation | pH      | Removal of color compounds |                             |                          | Activated carbon characteristics |            |
|---------------------|------------------------|-----------|------------|---------|----------------------------|-----------------------------|--------------------------|----------------------------------|------------|
|                     |                        |           |            |         | Light colors (yellow)      | Medium colors (light brown) | Dark colors (dark brown) | Purity                           | Filtration |
| Light/medium colors | NORIT® A SUPRA EUR/USP | PAC       | Steam      | Neutral | ●                          | ◐                           | ◐                        | ●                                | ◐          |
|                     | DARCO® G 60            | PAC       | Steam      | 5-8     | ◐                          | ◐                           | ◐                        | ●                                | ◐          |
|                     | NORIT C EXTRA USP      | PAC       | Steam      | Neutral | ◐                          | ●                           | ◐                        | ◐                                | ◐          |
| Medium/dark colors  | NORIT CGP SUPER        | PAC       | Chemical   | 3.5-6   | ◐                          | ◐                           | ●                        | ◐                                | ◐          |
|                     | NORIT CN1              | PAC       | Chemical   | 5.5-6   | ◐                          | ◐                           | ◐                        | ◐                                | ●          |
| Light/dark colors   | NORIT ROX 0.8          | Extrudate | Steam      | Neutral | ◐                          | ◐                           | ◐                        | ◐                                | N/A        |

Figure 2. Impurities removal table

● Best ◐ Better ◑ Good

Given that process chemists start with PAC but usually migrate to powdered activated carbon filter discs (Figure 3), we make these activated carbon grades available to the leading filter disc manufacturers, including: 3M, Pall, Millipore, Carlson, Gusmer, ErtelAlsop and Eaton Begerow. So whether you wish to use PAC for its ease of use and low cost, or prefer the cleaner filter disc product format to eliminate costly cleaning and validation steps, we have you covered.



Figure 3. Filter discs

**How to order**

The best way to receive a sample kit is to schedule a meeting with one of our Regional Sales Managers. We will deliver a presentation on activated carbon technology, its use in pharmaceutical applications and the kits will be handed out. Upon request, the presentation can also be tailored to meet your specific needs.

We offer two sample kits depending upon where you are located:

| Sample item name | For region                                 | Warehouse location        | Key difference             |
|------------------|--|---------------------------|----------------------------|
| Pharma Kit KZ    | Europe, Middle East, Africa                | Klazienaveen, Netherlands | Contains NORIT® SX PLUS LC |
| Pharma Kit MS    | Asia Pacific, North America, South America | Marshall, TX, USA         | Contains DARCO® G 60       |

Customers can also order the sample kit directly from our website [cabotcorp.com/pharmasamplekit](http://cabotcorp.com/pharmasamplekit)

**Sample kit contents**

1. Six half liter samples of activated carbon (5 powders and 1 extrudate)
2. USB drive containing pertinent documentation:
  - ◆ Product datasheets
  - ◆ Safety datasheets
  - ◆ Testing procedures
  - ◆ Product infosheet: Activated Carbon - Pharmaceutical Applications

Our sales, technical service and customer service teams are prepared to serve customers around the world. Contact us at [cabotcorp.com/activatedcarboncontact](http://cabotcorp.com/activatedcarboncontact)



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