

Refractories, Plastics, Insulation or Textiles Containing Chromium Compounds

Purpose

The original version of this Plant Service Bulletin (PSB-43) was issued in April of 1990 to alert owners and operators of boilers and steam generators that certain materials containing chromium may, under certain operating conditions, produce hexavalent chromium (Cr + 6), a carcinogen. It also suggested remedial action and substitute materials.

The initial issue of PSB-43 pertained only to chromium-containing refractories. This updated bulletin includes other materials containing chrome such as plastics, insulation, and textiles.

Problem

The U.S. Environmental Protection Agency (EPA) has determined that hexavalent chromium is a carcinogen. Some refractories and other materials that have been used in boilers may contain chromium compounds as part of the mixture or composition. During operation, some of the chromium compounds may be converted to hexavalent chromium. When the material is removed from the boiler, the dust created may transport the hexavalent chromium. Inhaling hexavalent chromium increases the risk of lung cancer in humans and may also cause other health hazards.

Suggested Action

Determine whether the chromium-containing refractory, or other chromium materials, are present in the boiler. When in doubt as to whether the material contains chromium compounds or whether the chromium compounds have been converted to hexavalent chromium, the materials should be tested by a qualified, independent test laboratory prior to removal. If such materials are present:

1. Provide the proper training, education, equipment, and monitoring to any personnel who will be in contact with the chromium-containing compounds. Follow OSHA and EPA regulations governing the type of personnel protection required, including equipment.

2. Never breathe the dust or allow the dust to contact the skin when removing or repairing the refractory or material. Follow OSHA guidelines as to the type of equipment to be used.
3. Dispose of the refractory or material waste only in accordance with EPA regulations for the identification and disposal of hazardous waste — generally 40 CFR part 240, et seq., and specifically 40 CFR Parts 261 and 262.

The following is a partial list of the most commonly used generic and brand names of chromium-containing **refractories and plastics** used in Babcock & Wilcox boilers:

Chrome Ore	Green PC
Chrome Mortar	Krom Ram
Plastic Chrome Ore	Fran Reco Chrome
Kromight Gun	Narco Chrome
Kromight	Basicrete HS
Hydrochrome	Emerald Ram Mix
Kromecast	Emerald Ram
Kromalox	Emerald Ram HS Plastic
Shamrock	Emerald Ram TR Plastic
Jade Pak	Quick Ram ER Ram
A.P. Green 3000	Sure-fire ER PLST
Alchrome	Gunning Mix
Monochrome	Moldit Chrome Castable

The following is a list of most commonly used generic and brand names of chromium-containing **insulation and textile products** used in Babcock & Wilcox boilers:

Cerachrome	Ceraform 130
Z-Blok	Cerachrome Felt

NOTE: The lists stated here are not complete, but do represent the most commonly used products.

Other generic and brand name chromium-containing products may have been used in your boiler. Your

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maintenance, purchasing and supplier records, as well as the brickwork, refractory, insulation and lagging specifications, should be reviewed to determine whether and where chromium-containing products were installed at the time the boiler was sold. The Babcock & Wilcox Company cannot determine the applications of chrome products after boiler operation, since retrofits are likely to occur during the life of the boiler.

Substitutes for chromium-containing products are available, but they sometimes have a shorter life span. Also, a substitute that works in one application may not work in another application, or the life span is significantly reduced. New substitutes are being

tested which may have a life span equal to the present chromium products.

If you need additional help identifying the locations in your boiler where chromium-containing products may be located, refer to the original installation drawings.

Support

Contact Babcock & Wilcox Field Service Engineering for alternate refractories, or if you have any questions or require further assistance in identifying locations where chromium-containing products may be found.

For more information...

In the U.S., call 1-800-BABCOCK (222-2625) or fax (216) 860-1886 (Barberton, Ohio). Outside the U.S., call (519) 621-2130 or fax (519) 621-2142 (Cambridge, Ontario, Canada). In Mexico, call (5) 208-1906 or fax (5) 533-5550. Or contact your nearest B&W sales or service office worldwide.

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