



METAL FINISHING PRODUCTS

Product Name: **DAB85**
Category: **Aluminum Brightening**
Order Codes: **DAB85, DAB85X, DAB85CF, DAB85CFX**

Source: Aurora, NC / Cincinnati, OH
Alternate Names: Bright Dip, R5, Non-Sulfuric Bright Dip

DESCRIPTION

DAB85 is a phosphoric acid-based solution containing fume suppressant and metallic brightener used to chemically polish aluminum. The fume suppressant significantly lowers the emission of NOx fumes and the metallic brightener increases total and specular reflectance for any given set of bright dip conditions. PotashCorp Purified Phosphates' DAB85 products are custom formulated to contain the amount of metallic brightener and fume suppressant specified by each customer.

PCS PURIFIED PHOSPHATES PRODUCT CODES	
DAB85 (standard)	DAB85CF (copper free)
DAB85X (extra fume suppressant)	DAB85CFX (copper free & extra fume suppressant)

TYPICAL CHEMICAL ANALYSES				
PRODUCT	TOTAL H ₃ PO ₄ %	SPECIFIC GRAVITY @ 25/15.5°C	METALLIC BRIGHTENER as Cu, ppm	FUME SUPPRESSANT as N, %
DAB85	84.5 - 85.5	1.680	90 - 130	0.2 - 0.3
DAB85X	84.5 - 85.5	1.680	90 - 130	0.6 - 0.8
DAB85CF	84.5 - 85.5	1.680	10 max.	0.2 - 0.3
DAB85CFX	84.5 - 85.5	1.680	10 max.	0.6 - 0.8

PACKAGES 55 gallon plastic drums or bulk

SHIPPING Refer to MSDS

SAFETY, STORAGE & HANDLING

DAB85 is a strong acid and is corrosive to skin, eyes and mucous membranes. The fumes evolved during the use of DAB85 are toxic and corrosive. The product does not burn but will emit toxic fumes when heated to high temperatures. Rubber gloves, apron and full face shield or chemical goggles must be used when handling this product. The Material Safety Data Sheet for DAB85 must be reviewed with all personnel who handle or come into contact with the product. A Material Safety Data Sheet may be obtained by calling PCS Sales Customer Service at 1-800-654-4514 or through our website at www.potashcorp.com.





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APPLICATION & OPERATING GUIDELINES

Application – Nitric acid is added to these phosphoric acid based solutions and the blend is then utilized to chemically polish the surface of aluminum to produce a highly specular or mirror-like finish. These solutions can be custom formulated to include any combination of copper, metallic brightener, or fume suppressant.

Addition – DAB85 is added as needed to maintain volume in the tank (replacement of drag-out losses). The only other necessary operating additions are nitric acid and water.

Operation – Typical bright-dip baths using DAB85 operate at a specific gravity of 1.71 - 1.74. Additions of water are often required to prevent the specific gravity from rising too high. If difficulties are experienced in maintaining specific gravity, there may be excessive drag-in of water from the cleaning operation or from a leak in the steam coil. To reduce the risk of crystallization (icing) during weekends and longer shutdowns, it is recommended that a "blanket" of water, usually 0.5 to 1.0 inch, be added to the bath at the close of work. Please call your Technical Representative for information.

A bath temperature of 190 - 230°F is preferred. Higher temperatures increase the rate of attack and thus the likelihood of pitting and "orange peel". As the bath is operated, the aluminum content will rise. An equilibrium state will be reached which balances the level of drag-out loss and chemical dissolution of aluminum. Baths normally stabilize at 25 - 50 g/L aluminum.

As the aluminum content increases, the optimum nitric acid increases. Recommended ranges are as follows:

Aluminum (g/L)	20	30	40	50
Nitric Acid (wt.%)	2.4 - 2.6	2.7 - 2.9	3.0 - 3.2	3.3 - 3.6

Tanks and heating coils should be made of 316L stainless steel, and since nitric acid provides resistance to corrosive attack of the stainless steel, the nitric acid content should not be allowed to fall below 2.0%.

Contamination due to oils, greases and buffering compounds, which have been dragged into the bath, will create a black scum on the surface of the solution. This should be skimmed off if it occurs. Contamination of this nature will increase the rate of attack and may lead to reduced brightening. Proper cleaning and rinsing will minimize this situation.

Additional information and operating conditions are available in PCS Sales' Technical Information Bulletin on "Bright Dipping Aluminum".

For further information or technical assistance, please contact:

PCS Sales Customer Service
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Northbrook, IL 60062
1-800-654-4514

Technical Services
PO Box 48, 1530 NC Hwy 306 South
Aurora, NC 27806
1-866-208-0931

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