

## DAB85 Aluminum Brightening

**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. The DAB85 products are custom formulated to contain the amount of metallic brightener and fume suppressant specified by each customer.

DAB80 PRODUCT CODES	
DAB85 (standard)	DAB85X (extra fume suppressant)
DAB85CF (copper free)	DAB80CFX (copper free & extra fume suppressant)

TYPICAL CHEMICAL ANALYSES				
PRODUCT	TOTAL as H <sub>3</sub> PO <sub>4</sub> (%)	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** Bulk

**SHIPPING** Refer to SDS

### 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 and corrosive fumes when heated to high temperatures. Rubber gloves, a chemical resistant suit or apron, and full face shield and/or chemical goggles, based on your risk assessment, must be used when handling this product. The Safety Data Sheet for DAB85 must be reviewed with all personnel who handle or come into contact with the product. A Safety Data Sheet may be obtained at [www.nutrien.com](http://www.nutrien.com).

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### APPLICATIONS & 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:

<b>Aluminum (g/L)</b>	20	30	40	50
<b>Nitric Acid (Wt. %)</b>	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 the Technical Information Bulletin on “Bright Dipping Aluminum”.

### FOR FURTHER INFORMATION OR TECHNICAL ASSISTANCE

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### Refer to a Safety Data Sheet for more information

To the best of Nutrien’s knowledge, the information contained herein is accurate and reliable as of the date compiled; however, Nutrien makes no representation, warranty or guarantee as to the information’s accuracy, reliability, completeness or timeliness. It is the user’s responsibility to determine the suitability and completeness of such information for the user’s own uses or purposes. Nutrien does not accept any liability for any loss or damage that may occur from any use of this information.

**Product is manufactured by the following subsidiary of Nutrien Ltd.:**

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