



# **Surface Technologies**

Translation of the German Technical Product  
Bulletin

## **Deoxidizer 6 (sulphuric acidic)**

Deoxidizing product for aluminum  
- liquid, chromic acid containing product -

<b>Fields of application:</b>	A solution of sulphuric acid or nitric acid containing the Deoxidizer 6 removes oxides and alkali residues of former alkaline degreasing or etching processes on aluminum and its alloys.  Deoxidizer 6 can be used in immersion and spray processes.	
<b>Process components:</b>	Deoxidizer 6 Deoxidizer 16 Sulphuric acid (ca. 96 %) or nitric acid (ca. 60 %)	
<b>Bath make-up:</b>	For the preparation of 1000 l of the Deoxidizer 6 solution in sulphuric acid add to 500 l of water under stirring :  Sulphuric acid (ca. 96 %)                      92 kg or 50 l Deoxidizer 6                                      57 kg or 50 l  After complete dissolution fill up with water to 1000 l.	
<b>Operating conditions:</b>	Free acid-points	18 - 20
	Cr ( VI ) -points	13 - 15
	Temperature	20 - 40 °C
	Time	1 - 10 min

**Process sequence:**

1. Clean/Pickle
2. Rinse
3. Deoxidize with Deoxidizer 6
4. Rinse
5. Conversion coating
6. Rinse
7. Rinse with DI-water
8. Dry

**Maintenance of the bath:**

The Deoxidizer 6 bath is controlled by a titration of the free acid-points and the Cr(VI)-points.

**Free acid-points:**

Titration:

1. Pipette 10 ml sample of the Deoxidizer 6 bath into a flask and dilute with 50 ml of distilled water.
2. Add 4 - 5 drops of bromkresolgreen.
3. Titrate against 1 N caustic solution until the colour changes from yellow to green.
4. Record the number of ml of 1 N caustic solution used as free acid-points.

**Replenishment:**

Add 5.5 kg or 3 l of sulphuric acid (ca. 96 %) per 1000 l of the bath for each free acid-point lacking.

The bath should be kept within 18 - 20 free acid-points.

**Cr(VI)-points:**

Titration:

1. Pipette 5 ml sample of the Deoxidizer 6 bath into a flask and dilute with 50 ml distilled water.
2. Add 20 ml of 25 %  $H_2SO_4$  and 2 - 3 g KJ.
3. Titrate against 0.1 N sodium thiosulphate solution until the colour changes from brown to yellow.
4. Add 1 - 2 ml of the starch solution to the sample and continue the titration until the blue-black colour disappears.
5. Record the number of ml of 0.1 N sodium thiosulphate solution used as Cr(VI)-points.

**Replenishment:**

Add 3.8 kg or 3.3 l Deoxidizer 16 per 1000 l of the bath for each Cr(VI)-point lacking.

The bath should be kept within 13 - 15 Cr(VI)-points.

**Remarks:**

The tank material containing the Deoxidizer 6 bath should be made out of rigid PVC (free of plasticizer) or austenic steel (type No. 1.4571).

Spraying systems, pumps and heat exchangers have to be made out of stainless steel (type No. 1.4571).

Bathes of Deoxidizer 6 as well as the subsequent rinsing bath are not to be discharged into the public sewage system without prior detoxification and neutralization.

**Caution:**

Deoxidizer 6 contains chromium trioxide and hydrofluoric acid. Wear

- Eye goggles
- Rubber gloves
- Acid resistant wear

Avoid contact with skin.

Provide air circulation.

**Equipment and chemicals for the analysis:**

Pipet, 5 ml  
Pipet, 10 ml  
Erlenmeyer flask, 300 ml  
Graduated cylinder, 50 ml  
Buret, 25 ml  
DI-water  
Alcoholic bromcresol green solution, 0.1 %  
Caustic solution, 1 N  
Sulphuric acid, 25 %, pur  
Potassium iodide  
Starch solution (stabilized), 1 %  
Sodium thiosulphate solution, 0.1 N

**The expiry date of the product is given on the packaging labels.**

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This information is based on our current level of knowledge. It is given in good faith but it is not intended to guarantee any particular properties. The users must satisfy themselves that there are no circumstances requiring additional information or precautions or the verification of details given herein.

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