

Cleaner 6030

Operating Instructions

Edition: 22 April 2002

- alkaline cleaner
- cyanide-free form of supply of the component: Cleaner 6030 Salt Mixture
- may be used with or without cyanide
- works cathodically
- mainly for non-ferrous heavy metals
- for the TIRUNA process: also applicable as a cyanide soak cleaner and as an anodic cleaner

A) Cleaner 6030 - use without cyanide:

Bath Characteristics

Cleaner 6030 is an electrolytic, alkaline and cyanide-free cleaner working cathodically, mainly for non-ferrous heavy metals like brass, CuFe, CuSn_x, CuBe, and Cu.

It is not only used as a secondary cleaner but also to remove rust-preventing oils and drawing compounds if other than the materials listed above are used.

If the surfaces are more heavily soiled, they should be pre-degreased in a soak cleaner or an ultrasonic degreasing bath (e. g. Soak Cleaner 6000).

Bath type: cyanide-free alkaline cleaner

Content of Cleaner 6030 Salt Mixture: 100 g/l

Temperature: 50 °C

Current density: 12 A/dm²

Form of Supply

- | | |
|---------------------|---|
| Bath makeup: | a) Cleaner 6030 Salt Mixture (cyanide-free) Storage stability: unlimited 100 g to make up 1 l of bath |
| | b) Wetting Agent 12 [#] Storage stability: min. 2 years 1.0 ml to make up 1 l of bath |
| Bath replenishment: | c) Cleaner 6030 Salt Mixture (as item a) |
| | d) Wetting Agent 12 [#] (as item b) |

[#] *in reel to reel plants not recommendable because of foam-formation*

Bath Makeup

Preparations: All parts coming into contact with the bath must be alkali-proof and temperature-resistant. As a material for screw connections we recommend stainless steel of the type 1.4301 (V2A).

Prior to first use all parts coming into contact with the bath, as e.g. bath tanks, heating elements, cells, etc., have to be leached in 2 - 3 % sodium hydroxide solution.

Makeup sequence: For the bath makeup deionized water should be used.

Fill deionized water (room temperature, approx. 70 % of the final volume) into the bath tank.

Dissolve the required amount of Cleaner 6030 Salt Mixture in portions, stirring constantly. The electrolyte will warm up.

Add 1.0 ml/l Wetting Agent 12. (Wetting Agent 12 should be used for barrel and rack applications. For reel to reel plants Wetting Agent 12 is not recommendable.)

Then fill up to operating volume with deionized water.

After reaching the operating temperature, the electrolyte is ready for use.

Caution!

Cleaner 6030 is highly corrosive. The personnel must take the appropriate precautionary measures, like wearing safety goggles, protective clothing, etc.

When making up the bath and generally when working with Cleaner 6030 Salt Mixture, additional mouth and nose protection has to be worn.

Cleaner 6030

Operating Conditions

| | optimum | permissible range |
|---|----------------------|------------------------------|
| Content of Cleaner 6030 Salt Mixture: | 100 g/l | (80 - 120 g/l) |
| Content of Wet-ting Agent 12 (in reel to reel plants not recommendable) | 1.0 ml/l | (0.8 - 1.2 ml/l) |
| Operating temperature: | 50 °C | (40 - 60 °C) |
| Current density: | 12 A/dm ² | (10 - 15 A/dm ²) |

Bath Monitoring and Correction

The content of Cleaner 6030 Salt Mixture can be analytically controlled. The method is available on request.

The degreasing effect can be determined in a simple way. Degrease a metal strip (brass) in the usual way in a sample of Cleaner 6030, rinse, acid dip, and rinse again. The water film must not break even after a waiting period of 20 sec.

If the bath is highly contaminated, a new makeup is always preferable to a replenishment.

Equipment

| | |
|-----------------|---|
| Bath tanks: | Plastic tank of alkali-proof and temperature-resistant (70 °C) material or tanks lined with alkali-proof and temperature-resistant plastic. |
| Heating: | The heating elements must also be alkali-proof. We recommend steel or Teflon. |
| Anodes: | As anode material only stainless steel of the type 1.4301 (V2A) should be used. The anodes can be either flat or net material. |
| Exhaust system: | required |

Note

Our information relating to the storage stability refers to storage in closed original storage containers under the conditions stated on the label.

Precautionary Measures/Safety Hints

For information on safety, please see the corresponding Material Safety Data Sheets! The valid accident prevention regulations and safety information must be observed.

Reference to

| | |
|-----------------------|-----------------------------|
| Analytical control: | method available on request |
| Wastewater treatment: | method available on request |

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B) Cleaner 6030 - use with cyanide:

Bath Characteristics

Cleaner 6030 is an electrolytic, alkaline-cyanide cleaner working cathodically, mainly for non-ferrous heavy metals like brass, CuFe, CuSn_x, CuBe, and Cu.

It is not only used as a secondary cleaner but also to remove rust-preventing oils and drawing compounds if other than the materials listed above are used.

If the surfaces are more heavily soiled, they should be pre-degreased in a soak cleaner or an ultrasonic degreasing bath (e. g. Soak Cleaner 6000).

Bath type: alkaline-cyanide cleaner

Content of Cleaner 6030

Salt Mixture:

KCN content: 10 g/l

Temperature: 50 °C

Current density: 12 A/dm²

Form of Supply

- Bath makeup:
- Cleaner 6030 Salt Mixture (cyanide-free)
Storage stability: unlimited
100 g to make up 1 l of bath
 - Wetting Agent 12[#]
Storage stability: min. 2 years
1.0 ml to make up 1 l of bath
 - Potassium Cyanide*
Storage stability: unlimited
10 g to make up 1 l of bath
- Bath replenishment:
- Cleaner 6030 Salt Mixture (as item a)
 - Wetting Agent 12[#] (as item b)
 - Potassium Cyanide* (as item c)
- [#] *in reel to reel plants not recommendable because of foam-formation*
- * *not included*

Bath Makeup

Preparations: All parts coming into contact with the bath must be alkali-proof and temperature-resistant. As a material for screw connections we recommend stainless steel of the type 1.4301 (V2A).

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Makeup sequence: For the bath makeup deionized water should be used.

Fill deionized water (room temperature, approx. 70 % of the final volume) into the bath tank.

Dissolve the required amount of Cleaner 6030 Salt Mixture in portions, stirring constantly. The electrolyte will warm up.

Dissolve 10 g/l Potassium Cyanide.

Add 1.0 ml/l Wetting Agent 12. (Wetting Agent 12 should be used for barrel and rack applications. For reel to reel plants Wetting Agent 12 is not recommendable.)

Then fill up to operating volume with deionized water.

After reaching the operating temperature, the electrolyte is ready for use.

Caution!

Cleaner 6030 is highly corrosive and contains cyanide.

The personnel must take the appropriate precautionary measures, like wearing safety goggles, protective clothing, etc.

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Operating Conditions

| | optimum | permissible range |
|---|----------------------|------------------------------|
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| Content of Potassium Cyanide | 10 g/l | (8 - 12 g/l) |
| Content of Wet-ting Agent 12 (in reel to reel plants not recommendable) | 1.0 ml/l | (0.8 - 1.2 ml/l) |
| Operating temperature: | 50 °C | (40 - 60 °C) |
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