

Cleaning of heavy oils from Metal & Alloys components

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Abstract: The invention includes a method for cleaning (1)metals & Alloys components (2)surfaces, contact with 10-50 ml/liter of a composition(5) comprising about 2 to 10 % EDTA, 1-10 % Sodium Carbonate, 1-9 Sodium Hydroxide (NaOH), 2-10% Diethylene Glycol, 1-5% Alcohol c 9-11 Ethoxylated , 2-7% Sodium Sulfonate and about 70 to 90 % water. The compositions (7)further include a to increase the concentration to enhance cleaning performance.

Date of Submission: 15-01-2021

Date of acceptance: 31-01-2021

I. INTRODUCTION

A cleaning chemical is mixture of 6-8 chemicals, where every material plays important roles in the cleaning performance. Cleaning performance depends on various components. Increasing the concentration the cleaning performance can be accelerate upto some extent.

If increase the temprature then cleaning cycle (6)time may be decrease and if applying the ultrasonic vibration then it can be get a thoroughly cleaned components.

The lack of cleanliness of the components cleaned by conventional solvents, methods and apparatus is problematical where active ions and organic contamination such as organic films remain on the components.

It is a purpose of the present invention to provide alkaline based formulations which clean metal (3)& alloys surfaces without leaving organic films (11) and not as much hazardous as solvents (13).

SUMMARY OF THE INVENTION

The invention is a method for treating metals & alloys components surface (4)comprising :

i. Contacting the surface with 10-50 ml/liter of a composition comprising between about with 10-50 ml/liter of a composition comprising about 2 to 10 % EDTA, 1-10 % Sodium Carbonate, (7) 1-9 Sodium Hydroxide (NaOH), 2-10% Diethylene Glycol, (9) 1-5% Alcohol c 9-11 Ethoxylated , 2-7% Sodium Sulfonate and about 70 to 90 % water.

ii. Maintaining contact to free and remove residue (8) from the surfaces.

II. EXPERIMENTAL

DETAILED DESCRIPTION OF THE INVENTION

Compositions which are used for treating metals & alloys components according to the present invention include about 2 to 10 % EDTA, 1-10 % Sodium Carbonate,(4) 1-9 Sodium Hydroxide (NaOH), 2-10% Diethylene Glycol, 1-5% Alcohol c 9-11 Ethoxylated , 2-7% Sodium Sulfonate (5) and about 70 to 90 % water. Compositions of the invention comprise between about 2 to 10% EDTA (AVA Chemicals Pvt. Ltd.) , 1-10 % Sodium Carbonate (Advance Inorganics), 1-9 Sodium Hydroxide (NaOH of Gujat Alkaly), (10) 2-10% Diethylene Glycol (India Glycol), 1-5% Alcohol c 9-11 Ethoxylated (12) (Kusa Chem Pvt. Ltd.), 2-7% Sodium Sulfonate (Dow) and about 70 to 90 % water.

Water suitable for the present invention can be distilled water, soft water DM Water. Hard water (e.g. <500 ppm) is also suitable if the amount of chelant is sufficiently higher than that which sequesters the metal ions such as calcium and magnesium. Optionally, compositions of the invention can include more than one alkaline component and more than one chelant.

The metals & alloys components surfaces are treated by diluting the composition (7) described above (which includes an alkaline component, a chelant, and water) to a concentration of 10-50 ml/liter to form a dilute solution, contacting the solution with the metal & alloys components surface to free and remove residue from the surface according to table 1 in 2 to 10% EDTA (AVA Chemicals Pvt. Ltd.) , 1-10 % Sodium Carbonate (Advance Inorganics), 1-9 Sodium Hydroxide (NaOH of Gujat Alkaly), 2-10% Diethylene Glycol (India Glycol), 1-5% Alcohol c 9-11 Ethoxylated (Kusa Chem Pvt. Ltd.), 2-7% Sodium Sulfonate (Dow) and about 70 to 90 % water.

Table 1.

Chemicals Used	Claim 1	Claim 2	Claim 3	Claim 4
EDTA	2%	2%	2%	2%
Sodium Carbonate	2%	3%	4%	5%
NaOH	2%	3%	5%	7%
Diethylene Glycol	2%	2%	2%	2%
Alcohol c 9-11 Ethoxylated	1%	1%	2%	3%
Sodium Sulphonate	2%	2%	3%	4%
DM Water	89%	87%	82%	77%
Total	100%	100%	100%	100%

The method of the invention comprises:

- 1) contacting the surface with 10-15 ml/ltr
- 2) maintaining metals & alloys components to remove residue from the surfaces.

In the invention, materials such as metals & alloys components surfaces have to be cleaned.

III. RESULTS AND DISCUSSION

Metals & alloys components surface cleaning comprising with following claims:

Claim 1. A method for cleaning Metals & alloys components surfaces as concentration in table 2.

Table 2.

Chemicals Used	Claim 1
EDTA	2%
Sodium Carbonate	5%
NaOH	7%
Diethylene Glycol	2%
Alcohol c 9-11 Ethoxylated	3%
Sodium Sulphonate	4%
DM Water	77

- 1) contacting the surface with 10-15 ml/liter of a composition comprising in table 2,
- 2) maintaining contact to remove residue from the surface.

Claim 2. A method of claim 1 comprising cleaning metals & alloys components surfaces as concentration in table 3.

Table 3.

Chemicals Used	Claim 2
EDTA	2%
Sodium Carbonate	5%
NaOH	7%
Diethylene Glycol	2%
Alcohol c 9-11 Ethoxylated	3%
Sodium Sulphonate	4%
DM Water	77

- 1) contacting the surface with 10-15 ml/liter of a composition comprising in table 3,
- 2) maintaining contact to remove residue from the surface.

Claim 3. A method of claim 2 comprising cleaning metals & alloys components surfaces as concentration in table 4.

Table 4.

Chemicals Used	Claim 3
EDTA	2%
Sodium Carbonate	5%
NaOH	7%
Diethylene Glycol	2%
Alcohol c 9-11 Ethoxylated	3%
Sodium Sulphonate	4%
DM Water	77

- 1) contacting the surface with 10-15 ml/liter of a composition comprising in table 4,
- 2) maintaining contact to remove residue from the surface.

Claim 4. A method of claim 3 comprising cleaning metals & alloys components surfaces as concentration in table 5.

Table 5.

Chemicals Used	Claim 4
EDTA	2%
Sodium Carbonate	5%
NaOH	7%
Diethylene Glycol	2%
Alcohol c 9-11 Ethoxylated	3%
Sodium Sulphonate	4%
DM Water	77

- 1) contacting the surface with 10-15 ml/liter of a composition comprising in table 5,
- 2) maintaining contact to remove residue from the surface.

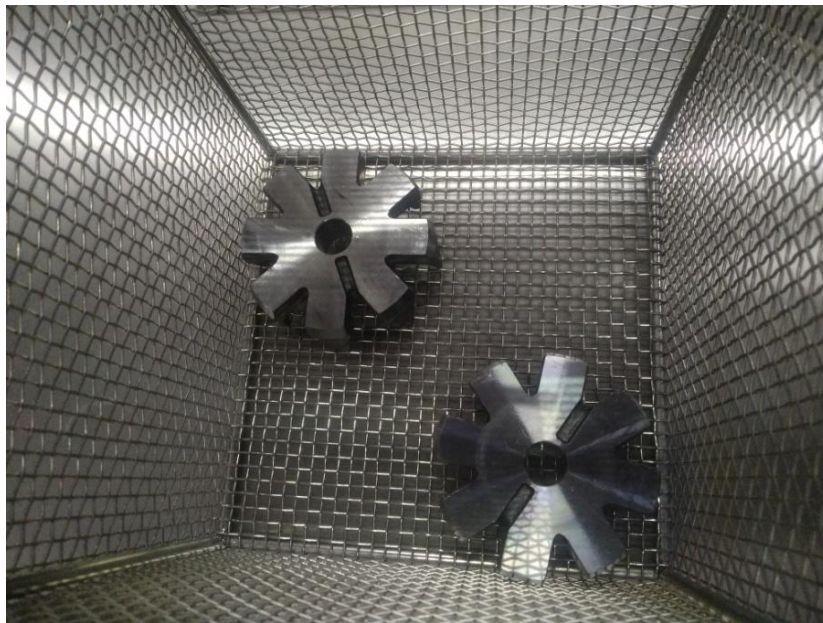


Image-1, Uncleaned Components

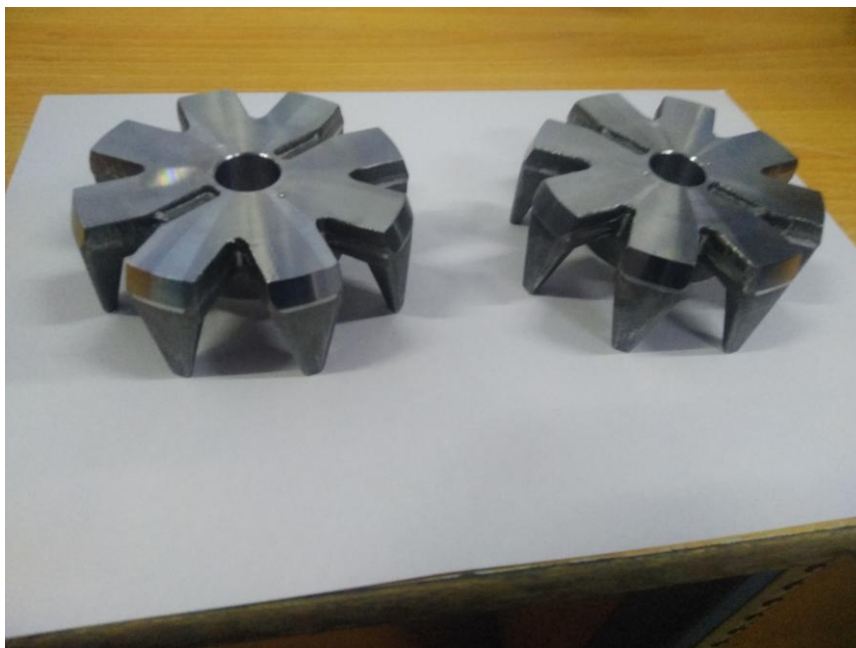


Image-2, Cleaned Components



Image-3, Cleaned Components



Image-4, Cleaned Components

IV. CONCLUSIONS

In this invention, the metals & alloys components surfaces are cleaned through different formulation and get cleaned. While the some residue remains on the surface of metal & alloys components in claim 1,2 & 3. The data table 5 demonstrate that the formulation of EDTA, Sodium Carbonate , Sodium Hydroxide (NaOH), Diethylene Glycol, Alcohol c 9-11 Ethoxylated , 2-7% Sodium Sulfonate and about 70 to 90 % water. Metals & alloys components surfaces cleaned pictures are 2, 3 & 4.

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