

Safety Data Sheet (SDS)

OSHA HazCom Standard 29 CFR 1910.1200(g) and GHS Rev 03.

Issue date 08/08/2016

Reviewed on 08/08/2016

1 Identification

- **Product Identifier**
- **Trade name: MS106807 Electropolishing Solution**
- **Product Number:**
ngt-MED701
ng-MS106807
- **Relevant identified uses of the substance or mixture and uses advised against:**
Use as directed by manufacturer.
- **Product Description** Electropolishing solution.
- **Application of the substance / the mixture:** Industry-specific application.
- **Details of the Supplier of the Safety Data Sheet:**
- **Manufacturer/Supplier:**
NuGeneration Technologies, LLC (dba NuGenTec)
1155 Park Avenue, Emeryville, CA 94608
salesteam@nugentec.com
1-888-996-8436 or 1-707-820-4080 for product information
www.nugentec.com
- **Emergency telephone number:**
PERS Emergency Response: Domestic and Canada - 1-800-633-8253, International 1-801-629-0667

2 Hazard(s) Identification

- **Classification of the substance or mixture:**



GHS08 Health hazard

Resp. Sens. 1 H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Carc. 1A H350 May cause cancer.

Repr. 1 H360 May damage fertility or the unborn child.

STOT RE 2 H373 May cause damage to organs through prolonged or repeated exposure.



GHS05 Corrosion

Skin Corr. 1A H314 Causes severe skin burns and eye damage.

Eye Dam. 1 H318 Causes serious eye damage.



GHS07

Skin Sens. 1 H317 May cause an allergic skin reaction.

- **Label elements:**

- **GHS label elements**

The product is classified and labeled according to the Globally Harmonized System (GHS).

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Trade name: MS106807 Electropolishing Solution

· **Hazard pictograms:**



GHS05 GHS08

· **Signal word: Danger**

· **Hazard-determining components of labeling:**

Orthophosphoric Acid
 Nickel(II) sulfate hexahydrate
 sulfuric acid

· **Hazard statements:**

H314 Causes severe skin burns and eye damage.
 H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
 H317 May cause an allergic skin reaction.
 H350 May cause cancer.
 H360 May damage fertility or the unborn child.
 H373 May cause damage to organs through prolonged or repeated exposure.

· **Precautionary statements:**

P260 Do not breathe dusts or mists.
 P284 [In case of inadequate ventilation] wear respiratory protection.
 P261 Avoid breathing dust/fume/gas/mist/vapors/spray.
 P280 Wear protective gloves.
 P280 Wear eye protection / face protection.
 P264 Wash thoroughly after handling.
 P272 Contaminated work clothing must not be allowed out of the workplace.
 P201 Obtain special instructions before use.
 P202 Do not handle until all safety precautions have been read and understood.
 P303+P361+P353 If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
 P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 P310 Immediately call a POISON CENTER/doctor.
 P321 Specific treatment (see supplementary first aid instructions on this Safety Data Sheet).
 P342+P311 If experiencing respiratory symptoms: Call a POISON CENTER/doctor.
 P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
 P363 Wash contaminated clothing before reuse.
 P304+P341 If inhaled: If breathing is difficult, remove person to fresh air and keep comfortable for breathing.
 P308+P313 IF exposed or concerned: Get medical advice/attention.
 P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
 P301+P330+P331 If swallowed: Rinse mouth. Do NOT induce vomiting.
 P314 Get medical advice/attention if you feel unwell.
 P302+P352 IF ON SKIN: Wash with plenty of water.
 P405 Store locked up.
 P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

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- **Classification system:**
- **NFPA ratings (scale 0 - 4)**



Health = 3
Fire = 0
Reactivity = 0

- **HMIS-ratings (scale 0 - 4)**



Health = *3
Fire = 0
Reactivity = 0

- **Hazard(s) not otherwise classified (HNOC):** None known

3 Composition/Information on Ingredients

- **Non-hazardous components:**

7732-18-5	Water, distilled water, deionized water	11.294%
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- **Chemical characterization: Mixtures**

- **Description:** Mixture of substances listed below with non-hazardous additions.

- **Dangerous Components:**

7664-32-2	Orthophosphoric Acid ⚠ Skin Corr. 1B, H314; Eye Dam. 1, H318; ⚠ Acute Tox. 4, H302	44.6%
7664-93-9	sulfuric acid ⚠ Skin Corr. 1A, H314	43.9%
10101-97-0	Nickel(II) sulfate hexahydrate ⚠ Resp. Sens. 1, H334; Muta. 2, H341; Carc. 1A, H350; Repr. 1B, H360; STOT RE 1, H372; ⚠ Aquatic Acute 1, H400; Aquatic Chronic 1, H410; ⚠ Acute Tox. 4, H302; Acute Tox. 4, H332; Skin Irrit. 2, H315; Skin Sens. 1, H317	0.147%

4 First-Aid Measures

- **Description of first aid measures:**

- **General information:**

Immediately remove any clothing soiled by the product.

Symptoms of poisoning may occur after exposure to dust, fumes or particulates; seek medical attention if feeling unwell.

- **After inhalation:**

Supply fresh air and to be sure call for a doctor.

In case of unconsciousness place patient stably in side position for transportation.

- **After skin contact:**

Immediately wash with water and soap and rinse thoroughly.

If skin irritation occurs, consult a doctor.

- **After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.

- **After swallowing:** Drink copious amounts of water and provide fresh air. Immediately call a doctor.

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- **Information for doctor:**
- **Most important symptoms and effects, both acute and delayed:**
No further relevant information available.
- **Indication of any immediate medical attention and special treatment needed:**
No further relevant information available.

5 Fire-Fighting Measures

- **Extinguishing media:**
- **Suitable extinguishing agents:**
CO₂, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **Special hazards arising from the substance or mixture:** No further relevant information available.
- **Advice for firefighters:**
- **Protective equipment:**
As in any fire, wear self-contained breathing apparatus pressure-demand (NIOSH approved or equivalent) and full protective gear to prevent contact with skin and eyes.

6 Accidental Release Measures

- **Personal precautions, protective equipment and emergency procedures:**
Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions:**
Dilute with plenty of water.
Do not allow to enter sewers/surface or ground water.
- **Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (i.e. sand, diatomite, acid binders, universal binders, sawdust).
Use neutralizing agent.
Dispose contaminated material as waste according to section 13.
Ensure adequate ventilation.
Dispose of the collected material according to regulations.
- **Reference to other sections:**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

7 Handling and Storage

- **Handling**
- **Precautions for safe handling:**
Ensure good ventilation/exhaustion at the workplace.
Open and handle receptacle with care.
Prevent formation of aerosols.
- **Information about protection against explosions and fires:**
Keep protective respiratory device available.

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- **Conditions for safe storage, including any incompatibilities:**
- **Storage**
- **Requirements to be met by storerooms and receptacles:** Store in the original container.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** Keep receptacle tightly sealed.
- **Specific end use(s):** No further relevant information available.

8 Exposure Controls/Personal Protection

- **Additional information about design of technical systems:** No further data; see section 7.
- **Control parameters:**
All ventilation should be designed in accordance with OSHA standard (29 CFR 1910.94). Use local exhaust at filling zones and where leakage and dust formation is probable. Use mechanical (general) ventilation for storage areas. Use appropriate ventilation as required to keep Exposure Limits in Air below TLV & PEL limits.

- **Components with occupational exposure limits:**

7664-32-2 Orthophosphoric Acid

TWA	Short-term value: 3 mg/m ³ Long-term value: 1 mg/m ³
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7664-93-9 sulfuric acid

PEL	Long-term value: 1 mg/m ³
REL	Long-term value: 1 mg/m ³
TLV	Long-term value: 0.2* mg/m ³ *as thoracic fraction

10101-97-0 Nickel(II) sulfate hexahydrate

PEL	Long-term value: 1 mg/m ³ as Ni
REL	Long-term value: 0.015 mg/m ³ as Ni; See Pocket Guide App. A
TLV	Long-term value: 0.1 mg/m ³ as Ni; inhalable fraction

- **Additional information:** The lists that were valid during the creation of this SDS were used as basis.

- **Exposure controls:**

- **Personal protective equipment:**

- **General protective and hygienic measures:**

The usual precautionary measures for handling chemicals should be followed.

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing and wash before reuse.

Wash hands before breaks and at the end of work.

Store protective clothing separately.

Avoid contact with the eyes and skin.

- **Breathing equipment:**

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure, use respiratory protective device that is independent of circulating air.

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· **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation. Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Select glove material based on penetration times, rates of diffusion and degradation.

· **Material of gloves:**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material cannot be calculated in advance and has therefore to be checked prior to the application.

· **Penetration time of glove material:**

The exact break-through time has to be determined and observed by the manufacturer of the protective gloves.

· **Eye protection:**



Tightly sealed goggles

· **Body protection:**



Protective work clothing

9 Physical and Chemical Properties

· **Information on basic physical and chemical properties**

· **General Information**

· **Appearance:**

Form:	Liquid
Color:	Dark green
Odor:	Mild
Odor threshold:	Not determined.

· **pH-value @ 20 °C (68 °F):** < 1

· **Change in condition**

Melting point/Melting range:	Not determined.
Boiling point/Boiling range:	100 °C (212 °F)

· **Flash point:** None

· **Flammability (solid, gaseous):** Not applicable.

· **Ignition temperature:** 425 °C (797 °F)

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- **Decomposition temperature:** Not determined.
- **Auto igniting:** Product is not self-igniting.
- **Danger of explosion:** Product does not present an explosion hazard.
- **Explosion limits:**
 - Lower:** 0.0 Vol %
 - Upper:** 0.0 Vol %
- **Vapor pressure @ 20 °C (68 °F):** 23 hPa (17 mm Hg)
- **Density @ 20 °C (68 °F):** 1.725 g/cm³ (14.395 lbs/gal)
- **Relative density:** Not determined.
- **Vapor density:** Not determined.
- **Evaporation rate:** Not determined.
- **Solubility in / Miscibility with:**
 - Water:** Fully miscible.
- **Partition coefficient (n-octanol/water):** Not determined.
- **Viscosity:**
 - Dynamic @ 20 °C (68 °F):** 1 mPas
 - Kinematic @ 40 °C (104 °F):** 1 mm²/s
- **Solvent content:**
 - Organic solvents:** 0.0 %
 - Water:** 11.3 %
- **Solids content:** 0.2 %
- **Other information:** No further relevant information available.

10 Stability and Reactivity

- **Reactivity:** No further relevant information available.
- **Chemical stability:** Stable under normal conditions.
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions:** No dangerous reactions known.
- **Conditions to avoid:** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

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11 Toxicological Information

- **Information on toxicological effects:**
- **Acute toxicity:**

- **LD/LC50 values that are relevant for classification:**

7664-32-2 Orthophosphoric Acid

Oral	LD50	1530 mg/kg (rat)
Dermal	LD50	2740 mg/kg (rabbit) (Standard Draize)
		Skin Irritation - Rabbit, 595 mg/24H: Severe
		Eye Irritation - Rabbit, 119 mg: Severe

- **Primary irritant effect:**
- **On the skin:**
Caustic effect on skin and mucous membranes.
Strong caustic effect on skin and mucous membranes.
May cause an allergic skin reaction.
- **On the eye:**
Strong caustic effect.
Corrosive effect.
Causes serious eye irritation.
- **Sensitization:** Sensitization possible through skin contact.
- **Additional toxicological information:**
Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.
The product shows the following dangers according to internally approved calculation methods for preparations:
Corrosive
Irritant
Carcinogenic if inhaled.
Swallowing will lead to a corrosive effect on mouth and throat and to the danger of perforation of esophagus and stomach.
- **Carcinogenic categories:**

- **IARC (International Agency for Research on Cancer):**

7664-93-9	sulfuric acid	1
10101-97-0	Nickel(II) sulfate hexahydrate	1

- **NTP (National Toxicology Program):**

7664-93-9	sulfuric acid	K
10101-97-0	Nickel(II) sulfate hexahydrate	K

- **OSHA-Ca (Occupational Safety & Health Administration):**

None of the ingredients are listed.

12 Ecological Information

- **Toxicity:** The hazards for the aquatic environment are unknown.
- **Aquatic toxicity:** No further relevant information available.

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- **Persistence and degradability:** No further relevant information available.
- **Behavior in environmental systems:**
- **Bioaccumulative potential:** No further relevant information available.
- **Mobility in soil:** No further relevant information available.
- **Additional ecological information:**
- **General notes:**
 Must not reach bodies of water or drainage ditch undiluted or unneutralized.
 Rinse off of bigger amounts into drains or the aquatic environment may lead to decreased pH-values. A low pH-value harms aquatic organisms. In the dilution of the use-level the pH-value is considerably increased, so that after the use of the product the aqueous waste, emptied into drains, is only low water-dangerous.
- **Results of PBT and vPvB assessment:**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects:** No further relevant information available.

13 Disposal Considerations

- **Waste treatment methods:**
- **Recommendation:**
 Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
 Observe all federal, state and local environmental regulations when disposing of this material.
- **Uncleaned packagings**
- **Recommendation:**
 Disposal must be made according to official regulations.
 Dispose of as unused product.
- **Recommended cleansing agent:** Water, if necessary with cleansing agents.

14 Transport Information

- **UN-Number:** UN3264
- **DOT, ADR, IMDG, IATA** UN3264
- **UN proper shipping name:** Corrosive liquid, acidic, inorganic, n.o.s. (Sulfuric acid, Phosphoric acid solution)
- **DOT** UN3264 Corrosive liquid, acidic, inorganic, n.o.s. (Sulfuric acid, Phosphoric acid solution)
- **ADR** UN3264 Corrosive liquid, acidic, inorganic, n.o.s. (Sulfuric acid, Phosphoric acid solution)
- **IMDG, IATA** CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (SULPHURIC ACID, PHOSPHORIC ACID, SOLUTION)

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Trade name: MS106807 Electropolishing Solution

· **Transport hazard class(es):**

· **DOT**



- **Class:** 8 Corrosive substances
- **Label:** 8

· **ADR**



- **Class:** 8 (C1) Corrosive substances
- **Label:** 8

· **IMDG, IATA**



- **Class:** 8 Corrosive substances
- **Label:** 8
- **Packing group:** II
- **DOT, ADR, IMDG, IATA** II
- **Environmental hazards:** Not applicable.
- **Special precautions for user:** Warning: Corrosive substances
- **Danger code (Kemler):** 80
- **EMS Number:** F-A,S-B
- **Segregation groups:** Acids
- **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code:** Not applicable.
- **Transport/Additional information:**
- **DOT**
- **Quantity limitations:** On passenger aircraft/rail: 1 L
On cargo aircraft only: 30 L

· **ADR**

- **Excepted quantities (EQ):** Code: E2
Maximum net quantity per inner packaging: 30 ml
Maximum net quantity per outer packaging: 500 ml

· **IMDG**

- **Limited quantities (LQ):** 1L

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|---|---|
| <ul style="list-style-type: none"> · Excepted quantities (EQ): · UN "Model Regulation": | <p>Code: E2
 Maximum net quantity per inner packaging: 30 ml
 Maximum net quantity per outer packaging: 500 ml
 UN3264, Corrosive liquid, acidic, inorganic, n.o.s.
 (Sulfuric acid, Phosphoric acid solution), 8, II</p> |
|---|---|

15 Regulatory Information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture:**
- **SARA (Superfund Amendments and Reauthorization):**

- **Section 355 (extremely hazardous substances):**

7664-93-9	sulfuric acid
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- **Section 313 (Specific toxic chemical listings):**

7664-93-9	sulfuric acid
10101-97-0	Nickel(II) sulfate hexahydrate
7789-02-8	Chromium(III) nitrate nonahydrate

- **TSCA (Toxic Substances Control Act):**

7664-93-9	sulfuric acid
10101-97-0	Nickel(II) sulfate hexahydrate
7732-18-5	Water, distilled water, deionized water

- **California Proposition 65:**

- **Chemicals known to cause cancer:**

10101-97-0	Nickel(II) sulfate hexahydrate
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- **Chemicals known to cause reproductive toxicity for females:**

None of the ingredients are listed.

- **Chemicals known to cause reproductive toxicity for males:**

None of the ingredients are listed.

- **Chemicals known to cause developmental toxicity:**

None of the ingredients are listed.

- **New Jersey Right-to-Know List:**

7664-93-9	sulfuric acid
10101-97-0	Nickel(II) sulfate hexahydrate

- **New Jersey Special Hazardous Substance List:**

7664-93-9	sulfuric acid		CA, CO, R2
10101-97-0	Nickel(II) sulfate hexahydrate		CA

- **Pennsylvania Right-to-Know List:**

7664-93-9	sulfuric acid
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- **Pennsylvania Special Hazardous Substance List:**

7664-93-9	sulfuric acid		E
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· **Carcinogenic categories:**

· **EPA (Environmental Protection Agency):**

None of the ingredients are listed.

· **TLV (Threshold Limit Value established by ACGIH):**

7664-93-9	sulfuric acid	A2
10101-97-0	Nickel(II) sulfate hexahydrate	A4

· **NIOSH-Ca (National Institute for Occupational Safety and Health):**

10101-97-0	Nickel(II) sulfate hexahydrate
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· **GHS label elements**

The product is classified and labeled according to the Globally Harmonized System (GHS).

· **Hazard pictograms:**



GHS05 GHS08

· **Signal word: Danger**

· **Hazard-determining components of labeling:**

Orthophosphoric Acid
Nickel(II) sulfate hexahydrate
sulfuric acid

· **Hazard statements:**

H314 Causes severe skin burns and eye damage.
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H317 May cause an allergic skin reaction.
H350 May cause cancer.
H360 May damage fertility or the unborn child.
H373 May cause damage to organs through prolonged or repeated exposure.

· **Precautionary statements:**

P260 Do not breathe dusts or mists.
P284 [In case of inadequate ventilation] wear respiratory protection.
P261 Avoid breathing dust/fume/gas/mist/vapors/spray.
P280 Wear protective gloves.
P280 Wear eye protection / face protection.
P264 Wash thoroughly after handling.
P272 Contaminated work clothing must not be allowed out of the workplace.
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P303+P361+P353 If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310 Immediately call a POISON CENTER/doctor.
P321 Specific treatment (see supplementary first aid instructions on this Safety Data Sheet).
P342+P311 If experiencing respiratory symptoms: Call a POISON CENTER/doctor.

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P304+P340 *IF INHALED: Remove person to fresh air and keep comfortable for breathing.*
 P363 *Wash contaminated clothing before reuse.*
 P304+P341 *If inhaled: If breathing is difficult, remove person to fresh air and keep comfortable for breathing.*
 P308+P313 *IF exposed or concerned: Get medical advice/attention.*
 P333+P313 *If skin irritation or rash occurs: Get medical advice/attention.*
 P301+P330+P331 *If swallowed: Rinse mouth. Do NOT induce vomiting.*
 P314 *Get medical advice/attention if you feel unwell.*
 P302+P352 *IF ON SKIN: Wash with plenty of water.*
 P405 *Store locked up.*
 P501 *Dispose of contents/container in accordance with local/regional/national/international regulations.*

• **National regulations:**

The product is subject to be classified according with the latest version of the regulations on hazardous substances.

• **Chemical safety assessment:** *A Chemical Safety Assessment has not been carried out.*

16 Other Information

The information and recommendations in this safety data sheet are, to the best of our knowledge, accurate as of the date of issue. Nothing herein shall be deemed to create warranty, expressed or implied, and shall not establish a legally valid contractual relationship. It is the responsibility of the user to determine applicability of this information and the suitability of the material or product for any particular purpose.

• **Date of preparation / last revision:** 08/08/2016 / -

• **Abbreviations and acronyms:**

ADR: *The European Agreement concerning the International Carriage of Dangerous Goods by Road*
 ADN: *The European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways*
 IMDG: *International Maritime Code for Dangerous Goods*
 DOT: *US Department of Transportation*
 IATA: *International Air Transport Association*
 ACGIH: *American Conference of Governmental Industrial Hygienists*
 EINECS: *European Inventory of Existing Commercial Chemical Substances*
 ELINCS: *European List of Notified Chemical Substances*
 CAS: *Chemical Abstracts Service (division of the American Chemical Society)*
 NFPA: *National Fire Protection Association (USA)*
 HMIS: *Hazardous Materials Identification System (USA)*
 LC50: *Lethal concentration, 50 percent*
 LD50: *Lethal dose, 50 percent*
 PBT: *Persistent, Bioaccumulative and Toxic*
 vPvB: *very Persistent and very Bioaccumulative*
 NIOSH: *National Institute for Occupational Safety*
 OSHA: *Occupational Safety & Health*
 TLV: *Threshold Limit Value*
 PEL: *Permissible Exposure Limit*
 REL: *Recommended Exposure Limit*
 Acute Tox. 4: *Acute toxicity – Category 4*
 Skin Corr. 1A: *Skin corrosion/irritation – Category 1A*
 Skin Corr. 1B: *Skin corrosion/irritation – Category 1B*
 Skin Irrit. 2: *Skin corrosion/irritation – Category 2*
 Eye Dam. 1: *Serious eye damage/eye irritation – Category 1*
 Resp. Sens. 1: *Respiratory sensitisation – Category 1*
 Skin Sens. 1: *Skin sensitisation – Category 1*
 Muta. 2: *Germ cell mutagenicity – Category 2*

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Trade name: MS106807 Electropolishing Solution*Carc. 1A: Carcinogenicity – Category 1A**Repr. 1: Reproductive toxicity – Category 1**Repr. 1B: Reproductive toxicity – Category 1B**STOT RE 1: Specific target organ toxicity (repeated exposure) – Category 1**STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2**Aquatic Acute 1: Hazardous to the aquatic environment - acute aquatic hazard – Category 1**Aquatic Chronic 1: Hazardous to the aquatic environment - long-term aquatic hazard – Category 1**** Data compared to the previous version altered.**SDS created by MSDS Authoring Services www.msdsauthoring.com +1-877-204-9106

US