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|  | <p style="text-align: center;"><b>MSDS</b><br/>Material Safety Data Sheet</p> | <p>Document No.: MSDS030<br/>Version No.: 02<br/>Effective Date: 25 Aug 2011</p> |
| <p><b>Tin Standard Solution</b></p>  |   |  |

**1. Identification of the substance or preparation and the company/undertaking**

Product Name: Tin Standard Solution

Product number: R-300-20STSN-01, R-100-51STSN-01

company: Cogent Environmental Ltd  
Unit 3, Edinburgh House  
Innovation Park  
Cambridge, CB4 0DS  
UK

Telephone: +44 (0) 1223 420311

Email: [info@cogenv.co.uk](mailto:info@cogenv.co.uk)

**2. Composition/information on ingredients**

Product name: Tin Standard 20 ppm, Tin Standard 1ppm

CAS number: none

EC number: none

| <u>Hazardous Ingredients</u> | <u>Proportion</u> | <u>CAS-No</u> | <u>EC-No</u> |
|------------------------------|-------------------|---------------|--------------|
| Hydrochloric acid            | 4.0%              | 7647-01-0     | 231-595-7    |

Symbol: C

R-phrases: R34,37

Causes burns. Irritating to respiratory system.

**3. Hazards identification**

Not classified as dangerous according to EC Directives

**4. First aid measures**

If swallowed: Wash out mouth thoroughly providing person is conscious. Do not induce vomiting. Seek medical advice.

After eye contact: Irrigate thoroughly with water for at least 15 minutes. If discomfort persists obtain medical attention.

After skin contact: Remove contaminated clothing. Wash skin thoroughly with water and mild soap. Seek medical advice if irritation persists. Launder clothing before reuse.

If inhaled: Remove individual from contaminated air, rest and keep warm. If breathing is difficult give oxygen and seek medical assistance.

**5. Fire-fighting measures**

Not combustible. May evolve toxic fumes in fire.

Fire fighters should wear self contained breathing apparatus if exposure to fumes is likely.

Use water spray, foam or dry chemical to control fire situation if compatible with other chemical products in the vicinity.

**6. Accidental release measures**

Wear protective clothing when dealing with spills. Absorb spills with sand or vermiculite. Neutralise with sodium bicarbonate. Dispose of in accordance with local regulations.

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**7. Handling and storage**

Handling: Do not breathe vapour. Do not get in eyes, on skin or clothing. Change contaminated clothing. Wash hands after working with substance. Avoid prolonged or repeated exposure. Do not empty into drains.

Storage: Store sealed in original container in a cool well ventilated situation away from foods and other chemicals. Do not store in direct sunlight. Observe good hygiene and housekeeping practices. Solution is acidic and may corrode metals. Do not mix with cyanides or sulphides.

**8. Exposure controls and personal protection**

UK Exposure Limits:

Hydrogen chloride: 8 mg/m<sup>3</sup> Short term (5 ppm) & 2 mg/m<sup>3</sup> long-term (1 ppm) (IVL)

Engineering Controls:

Always use this product with good general ventilation (10-15 changes of air in the room per hour) or preferably in a chemical fume hood. Maintain atmospheric concentrations as low as possible.

Personal Protection:

Avoid all skin and eye contact. Wear protective clothing including safety glasses and rubber or PVC gloves. Never pipette by mouth.

**9. Physical and chemical properties**

|                                 |                         |
|---------------------------------|-------------------------|
| Appearance:                     | Clear colourless Liquid |
| Boiling point (°C):             | 100 (approx)            |
| Vapour pressure (mmHg at 20°C): | 25 (approx)             |
| Specific Gravity (g/mL):        | 1.0                     |
| Flash Point (°C):               | Not flammable           |
| Flammability limits (%):        | Not flammable           |
| Solubility in water (g/L):      | Completely miscible     |

Other Properties: pH approx 1. Acidic solution. Will corrode metals. Will produce toxic gases on contact with cyanides, sulphides etc.

**10. Stability and reactivity**

Stable

**11. Toxicological information**

After ingestion: May cause irritation of mucous membranes in mouth, pharynx, oesophagus and gastrointestinal tract.

After skin contact: May cause irritation.

After eye contact: May cause irritation.

After inhalation of vapours: May cause irritation to the respiratory tract.

**12. Ecological information**

No data available.

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### **13. Disposal considerations**

Contact a licensed professional waste disposal service to dispose of this material. Observe local and national environmental regulations.

### **14. Transport information**

Non – hazardous for air, road or sea transport.

### **15. Regulatory information**

Not classified as dangerous according to EC directives.

### **16. Other information**

None

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