# Technical Datasheet

WARTON METALS LIMITED

## Total Clean™

PCB Total Submersion Cleaner


## Product:

Total Clean 300 PCB Total Submersion Cleaner

## Manufactured By:

Warton Metals Ltd
Grove Mill, Commerce Street
Haslingden, Lancashire
BB4 5JT ENGLAND

Tel: + 44 (0)1706 218888
Fax: + 44 (0) 1706 221188

## Description

Total Clean 300 is a blend of oxygenated solvents free from CFC's. Total Clean 300 is completely miscible in water and is biodegradable.

Total Clean 300 removes RA, RMA, Synthetic Resin and Rosin Free flux types from printed circuit boards. Total Clean 300 has a low surface tension, ensuring efficient penetration and cleaning under SMT Components.

Total Clean has a high flash point and low vapour pressure which helps to make it safe and easy to handle. It works at low operating temperatures and is a clear, colourless liquid with only a mild solvent odour.

## Process Information

Total Clean 300 can be used in in-line or stage batch cleaning processes. Total Clean 300 can be used as a solvent only system or semi aqueous system. A minimum of 1 wash cycle, 2 rinse cycles and an effective forced air or vacuum drier is recommended.

| | Wash | Rinse | Rinse | Dry |
|---|---|---|---|---|
| **Total Clean only** | Total Clean 300 | Total Clean 300 | Total Clean 300 | Dry |
| **Semi-aqueous system** | Total Clean 300 | Water | De-ionised water | Dry |

## Total Clean Process Stages

**Wash -** The consistency of cleaning results can be improved by operating at 30-60 C, the use of agitation, e.g. ultrasonics spray under immersion. The length of time required to achieve effective cleaning will depend on the operating conditions and the contamination to be removed.

With high power ultrasonics at 50 C, 3 minutes is usually sufficient. Lower power ultrasonics or spray under immersion may require longer wash times (5-7 minutes). Replace when Total Clean 300 reaches 15%wt contamination.

**Rinse -** A minimum of 2 rinses, each lasting one minute, is recommended.

The cleanliness of the final Total Clean rinse or water rinse should be maintained by re-circulating through ion exchange and activated carbon packs

**Dry -** Forced air or vacuum drying is recommended. For Total Clean only systems a maximum temperature of 85 C is recommended

## Waste removal

Contact your local authority for advice on registered waste contractors. Total Clean 300 does have value as a secondary fuel to cement kiln operators. Total Clean 300 has a calorific value of ca.7400Kcal/Kg.

## Material compatibility

Total Clean 300 is compatible with:
High / Low density polyethylene HDPE / LDPE Linear LDPE, Polypropylene, Nylon, Butyl ethylenepropylene rubber, Poly ether ether ketone PEEK, Polyethersulphone, Phenolic resins

## Packaging

Total Clean 300 is available in 10 litre, 25 litre and 205 litre containers.

# Material Health & Safety Datasheet

WARTON METALS LIMITED

| Section 1. Identification of the substance / preparation and of the company / undertaking | |
|---|---|
| Product Name: | Total Clean 300 Total Submersion Cleaner |
| Manufactured By: | Warton Metals Limited<br>Grove Mill, Commerce Street. Haslingden. Lancashire. BB4 5JT. ENGLAND. |
| Emergency Telephone: | +44 (0)1706 218888 |
| Emergency Fax: | +44 (0)1706 221188 |

| Section 2. Composition / Infomation on Ingredients | | | |
|---|---|---|---|
| Ingredient | CAS No: | Nature of Hazard | %W.W Range |
| A mixture of glycol esthers in range | 112-34-5 | | <100.0% |
| $C_6$-$C_8$ | 111-90-0 | Xi R36 | <100.0% |
| | Boling Point Range 190-235°C Specific Gravity 0.952-0.993<br>Contains maximum 0.2% water as supplied | | |

| Section 3. Hazards Identification | |
|---|---|
| | Irritating to eyes |

| Section 4. First Aid Measures | |
|---|---|
| Inhalation: | Remove to fresh air. Obtain medical attention. Perform artificial respiration if breathing has stopped. Treat symptomatically. |
| Skin Contact: | Wash with soap and water. Remove affected person from the source of contamination. Promptly wash contaminated skin with soap and warm water. Remove clothing if soaked through and wash as above. |
| Eye Contact: | Rinse with water for about 10 minutes whilst lifting the eyelids. Seek medical advice. |
| Ingestion: | DO NOT induce vomiting, drink water and seek medical advice. Give water to drink. |

| Section 5. Fire Fighting Measures | |
|---|---|
| Extinguisher Media: | Use water, dry chemicals, sand, dolomite etc., foam carbon dioxide. Foam should be applied in large quantities as it is broken down, to some extent by the product. |
| Special Fire Fighting Procedures: | Cool containers exposed to flames with water from the side until well after the fire is out. If water pollution occurs, notify appropriate authorities. Keep run off water out of sewers and water sources. Dike for water control. |

| Section 6. Accidental Release Measures | |
|---|---|
| | Extinguish all ignition sources. Avoid sparks and flames, heat and smoking. Ventilate well. Wash thoroughly after dealing with spillage. Runoff or release to sewer, waterway or ground,is forbidden. Absorb vermiculite, dry sand or earth and place in containers. |

| Section 7. Handling & Storage | |
|---|---|
| Usage Precautions | Keep ,away from heat, sparks or open flame. Avoid spilling, skin and eye contact. Ensure good ventilation. Fire extinguishers should be kept handy. |
| Storage Precautions: | Keep in a cool, dry, ventilated storage area and in close containers, prevent contact with air/oxygen (formation of peroxide). |

| Section 8. Exposure Controls & Personal Protection | |
|---|---|
| **Occupational Exposure Limits:-** | |
| Butyl Di Glycol 112-34-5 No standard set | |
| **Personal Protection:-** | |
| Gloves: | Wear protective gloves if there is a risk of direct contact or splash. |
| Eye Protection: | Eye protection should be used. |
| Other Protection | Provide eyewash station |

| Section 9. Physical & Chemical Properties. | | | |
|---|---|---|---|
| Appearance / colour: | clear liquid | Viscosity (40 C): | 3.54 cSt |
| Odour: | Chemical | Form / colour: | colourless |
| Density: | 0.962 | Boiling Point Range | 190-235 C |
| Flash point: | 94-105 C | Auto Ignition Temperature | 210 |
| Solubility in water: | miscible | Vapour Pressure | 0.1mbar approx |
| | | Specific Gravity | 0.952-0.993 |

| Section 10. Stability & Reactivity | |
|---|---|
| Stability | Avoid air and oxidisers |
| Incompatible Specific Chemicals | Light metals |
| Materials to avoid | Strong oxidising agents |

| **Section 11. Toxicological Information** ( toxic effects arising from exposure based on experimental and non experimental data) | |
|---|---|
| Toxic dose 1-LD50 | 2000mg/kg (oral rat) - Butyl diglycol |
| Medical Symptoms | Irritating to eyes, mucous membranes and skin. Gastrointestinal symptoms including stomach upsets. |
| Target organs | Kidney, eyes, liver and skin |
| Toxicological information: | Inhalation: Vapours or mists may cause respiratory tract irritation.<br>skin: may cause slight irritation<br>Eyes: may cause slight irritation<br>Ingestion can cause CNS, gastrointestinal and kidney injury. |

| **Section 12. Ecological Information** | |
|---|---|
| (Possible environmental effects and behaviour /ODP/aquatic toxicity): | LC50/Leuciscus idus/: 1805-2304 mg/1/48h. Bacteria-Pseudomonas putida. Toxic limit concentration 255 mg/1<br>Partition Coeff. Water/Octanol: 0.6 |

| **Section 13. Disposal Considerations** | |
|---|---|
| (Safe disposal of product, its residues and packaging materials): | Do not allow run off to sewer, waterway or ground.. Confirm disposal procedures with environmental engineer and local regulations. Contaminated packs should be emptied as far as possible, they can then be passed on for recycling after thoroughly being cleaned. Contaminated extinguishing water must be disposed of in accordance with local regulations. |

| **Section 14. Transport Information** | |
|---|---|
| ADR/RID Class Item: | N/A |
| IMO Class: | N/A |

| **Section 15. Regulatory Information** | |
|---|---|
| | Classification and labelling to EEC Directives |
| Classification symbol | Irritant/ Xi |
| Governing Directive: | Dangerous Preparations Directive 88/379/EEC |
| Nature of special risk: | R36 irritating to eyes |
| Safety advise: | S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical attention. |

| **Section 16. Other Information** | |
|---|---|
| Recommended uses and restrictions: | It is the responsibility to ensure safe working within the workplace remains with the user. |
| Publications references: | The health hazard and general information contained within this material safety datasheet are given as a guide to the precautions required to maintain a safe working environment. |

| **Section 17. Revision Dates** | |
|---|---|
| Revised Date / Initials: | December 2002 VHM |
| Replacing: | All previous health and safety datasheets |
| Legend: | N/A = Not applicable or available at time of printing.<br>N/D = Not determined or not determinable.<br>Est. = Estimated |

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