WARTON METALS LIMITED

# MATERIAL APPLICATION & SAFETY DATASHEET

Future

## Product Name:

Future 315 Low Residue No Clean Flux

## 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

**Future 315 Low Residue No Clean, Flux** is a 2% solids colophony free and halide free flux suitable for most no clean professional soldering applications. Future not only improves soldering performance (no bridges or icicles) but also reduces costs as cleaning is not necessary. Future 315 Low Residue No Clean Flux offers excellent solderability with the minimal level of flux residue. Future 315 Low Residue No Clean is suitable for spray or foam fluxing systems.

## Physical Properties

Solids content.....:2%.
Specific gravity at 20°C.....:0.805±0.05
Halide content.....:zero.
Colophony content.....:zero.
Volatiles.....:98%.

## Typical Uses

**Future 315 Low Residue No Clean Flux** is suitable for conventional, mixed and surface mount technologies. For telecommunications, computer and general consumer electronics.

## Application and Maintenance

**Before Use.** Read all material safety information. Flux previously used must be thoroughly cleaned out of the system - as small amounts can upset the performance of **Warton Future**. Carriers, pallets and fingers must be cleaned.

**Foam Fluxing Systems.** At night and at weekends the flux should be removed from the machine and stored in a closed container. The air stone should be left soaking in **Warton Thinners 2000** and changed before the quality of foam deteriorates. It is advisable to use a new stone when replacing rosin type fluxes. A programme for the regular replacement of the flux should be established to prevent the accumulation of contamination within the flux. The recommended run-time of a low solids flux is 40 hours.

**Flux Control.** Specific Gravity of **Future 315** is 0.805 typical.
**Spray Systems. Future 315** is suitable and enhanced by the use of a total loss spray system.

**Air Knives (foaming systems).** The air knife should be angled 5-12° away from the foam wave, removing excess flux without destroying the foam head. **(spray systems).** Ideally an air knife should be fitted even when using a spray system thus preventing insufficient capillary action when soldering. Spray system air knives are normally angled slightly towards the system. Excessive white deposits on the top side of the board are usually due to excess flux application. This can be reduced by the air knife angle, air volume and pressure.

**Track Speed.** The ideal track speed depends on the preheats, the type of board. A speed of between 1.2 - 1.8 metres per minute will suit most applications.

**Preheat.** A topside temperature of between 80°C and 110 °C is recommended.

**Solder Temperature.** A solder temperature between 230°C and 250°C can be used.

**Wave Height.** The correct set up is achieved by balancing the pot height, pump speed and the back of the wave former. They should give the depth of the wave required and the flow. Adjustment of the back plate may be difficult to adjust on a poorly maintained bath. Care must be taken to ensure the back plate is level when the adjustment is completed.

## Thinners

**Warton Metals Ltd** recommend **Thinners 2000** should be used with **Future 315** to ensure optimum performance and consistency.

## Packaging

**Warton Future 315** and **Warton Thinners 1000** are supplied in 10 litre and 25 litre containers and flux pens.

WARTON METALS LIMITED

# Material Safety Datasheet

## Warton Future 315 Liquid Flux

| **Section 1. Identification of the substance / preparation and of the company / undertaking** | |
|---|---|
| Product Name: | Future 315 Low Residue Liquid Flux for use in the electronics Industry |
| 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 |
| Email | sales@warton-metals.co.uk |

| **Section 2. Composition / Information on Ingredients** | |
|---|---|
| Isopropyl Alcohol (IPA) | CAS No: 67-63-0 EINECS No: 200-661-7 Propan-2-OL( Isopropyl Alcohol) R 36 - Irritating To Eyes EEC Symbol - Xi Weight 99%. |
| Activators & inhibitors | <10%. Non hazardous |

| **Section 3. Hazards Identification** | |
|---|---|
| Health Hazards | Irritating To Eyes, May cause lung damage if swallowed. |
| Physical & Chemical / Fire & Explosion Hazards: | Extreme hazard. Leaks of gas or spills of liquid can readily form flammable mixtures at temperatures at or above the flash point. |

| **Section 4. First Aid Measures** | |
|---|---|
| Inhalation: | Using approved respiratory protection, immediately remove the affected victim from exposure. Administer artificial respiration if breathing is stopped. Keep at rest. Call for prompt medical attention. |
| Skin Contact: | Flush with large amounts of water: use soap if available. Remove grossly contaminated clothing, including shoes and launder before reuse. |
| Eye Contact: | Immediately flush eyes with large amounts of water for at least 15 minutes. Get prompt medical attention. |
| Ingestion: | If swallowed, DO NOT induce vomiting. Keep at rest. Get prompt medical attention. |

| **Section 5. Fire Fighting Measures** | |
|---|---|
| Suitable extinguishing media: | Use water spray to cool fire exposed surfaces and to protect personnel. Shut off "fuel" to fire. If a leak or spill has not ignited, use water spray to disperse the vapours and to protect men attempting to stop a leak. Either allow fire to burn under controlled conditions or extinguish with alcohol type foam or dry chemical. Try to cover liquid spills with foam. |
| Protective measures: | See section 4 "First Aid Measures" and section 10 "Stability and Reactivity". |

| **Section 6. Accidental Release Measures** | |
|---|---|
| Personal precautions:<br>Environmental precautions:<br>Methods of clearing up: | Eliminate sources of ignition. Warn occupants of downwind areas of fire and explosion hazard. Prevent liquid from entering sewers, watercourses, or low areas.<br>Keep public away. Shut off source if possible to do so without hazard.<br>Advise police if substance has entered a watercourse or sewer<br>Or has contaminated soil or vegetation. Take measures to minimise the effect on the ground water.<br>Contain spilled liquid with sand or earth. Dilute contained spill with water. Recover by pumping (use an explosion proof or hand pump) or with a suitable absorbent. If liquid is too viscous for pumping, scrape up with shovels or pails and place in suitable containers for recycle or disposal.<br>Consult an expert on disposal of recovered material and ensure conformity to local disposal regulations.<br>See section 4 " First Aid Measures" and section 10 "Stability and Reactivity". |

| **Section 7. Handling & Storage** | |
|---|---|
| Storage / Transport Temperature °C: | Ambient |
| Loading/Unloading Temperature (°C): | Ambient |
| Viscosity (ost): | 2.65 |
| Storage Transport Pressure (Kpa): | Atmospheric |
| Electrostatic Accumulation Hazard: | Yes, Use proper grounding procedure. |
| Usual Shipping Containers: | Tank cars, tank wagons, barges or drums. |
| Storage, Handling and General Notes: | Keep container closed. Handle and open containers with care. Store in a cool, well ventilated place away from incompatible materials. DO NOT store or handle near an open flame, sources of heat, or sources of ignition. Protect material from direct sunlight. Material will accumulate static charges which may cause an electrical spark (ignition source). Use proper grounding procedures. Empty product containers may contain product residue. DO NOT reuse containers without commercial cleaning or reconditioning. |

| **Section 8. Exposure Controls & Personal Protection** | |
|---|---|
| Workplace Exposure Limits: | The use of mechanical dilution ventilation is recommended whenever this product is used in a confined space, is heated above the ambient temperatures or otherwise to maintain ambient concentration below recommended threshold exposure limits. |
| Threshold Limit Value (TLV): | The ACGIH recommends a TWA of 400 ppm (980 mg/m$^3$), and a STEL of 500 ppm (1225 mg/m$^3$) for Isopropyl Alcohol. |
| Personal Protection: Respiratory Protection: | For open systems where contact is likely:-<br>Use NIOSH/MSHA approved organic vapour cartridge half mask respirator for excessive concentration up to 10 times the exposure limits. Wear long sleeves, chemical resistant gloves and chemical goggles. Where contact may occur, wear safety glasses with side shields. A neoprene apron should be worn where the potential for splashing exists. |

| Section 8. Exposure Controls & Personal Protection | |
|---|---|
| Ventilation To Be Used: | Local exhaust, maintain exposure below PEL/TLV's.<br>Where concentrations in air may exceed the limits given in this section, and engineering, work practise or other means of exposure reduction are not adequate, approved respirators may be necessary to prevent over exposure by inhalation. |

| Section 9. Physical & Chemical Properties. | | | |
|---|---|---|---|
| Physical State: Form/Colour: | Liquid Clear, Colourless | Explosive Limits (in air): | 1.8-12.0 VOL% |
| Odour: | Alcohol Odour | Vapour Density (1013 | Approximately |
| pH (°C): | 6 | Kpa/air+1): | >1.00kpa |
| Freeze / Melt Point: | -85.00°°C | Solubility In Water (20°C): | <99 wt% |
| Flashpoint (TCC): | <19ºC | Evaporation Rate (n-Bu | 2.500 |
| Auto-ignition Temperature: | >350ºC | Acetate=1): | |

-

| Section 10. Stability & Reactivity | |
|---|---|
| Hazardous Polymerisation?: Conditions To Avoid | No |
| Polymerisation: | Not applicable |
| Stability: | Stable |
| Conditions To Avoid Instability: | Not applicable |
| Materials & Conditions To Avoid (incompatibility): | Strong oxidising agents. |
| Hazardous Decomposition Products: | None |

| Section 11. Toxicological Information ( toxic effects arising from exposure based on experimental and non experimental data) | |
|---|---|
| Inhalation: | Vapour concentration above recommended exposure levels are irritating to eyes and the respiratory tract, may cause dizziness. |
| Skin contact: | Low order of toxicity. Frequent or prolonged contact may irritate and cause dermatitis. |
| Eye Contact: | Irritating, and will injure eye tissue if not removed promptly. |
| Ingestion: | Small amounts of liquid aspirated into the respiratory system during ingestion or from vomiting may cause bronchopneumonia or pulmonary edema. Minimal toxicity. |

| Section 12. Ecological Information | |
|---|---|
| Possible environmental effects | Not relevant |

| Section 13. Disposal Considerations | |
|---|---|
| (Safe disposal of product, its residues and packaging materials): | The following advice only applies to the product as supplied. Empty drums should be taken for recycling, recovery or disposal through a suitably qualified or licensed contractor. care should in any case be taken to ensure compliance with EC, national and local regulations. This product is NOT suitable for disposal by either landfill or via municipal sewers, drains, natural streams or rivers. |

| Section 14. Transport Information | | | |
|---|---|---|---|
| | Land (railway, road, such as RID/ADR) ADR/RID Class, | EMS Number | 3-06 |
| | | MFAG: | 305**:** |
| Item: | 3, 3b | Marine Pollutant | No |
| Empty Containers | : 3,41 | Risk Label: | 3 |
| Danger Number | 33 | Packaging | Group:II |
| Danger Label: | 3**:** | IMDG Code Page | 3244 |
| Max. KG Exempt | 333 | Proper Shipping Name: | Isopropanol(Isopropyl Alcohol). |
| Substance ID Number: | 1219 | *AIR* (ICAO/IATA) Class: | 3 |
| Transport Document Name: | Isopropanol (Isopropyl alcohol). | Passenger Packing Instruction | 305/Y305 |
| | | Passenger Max.Quantity pack | 5L/1L |
| *SEA* (IMDG) UN Number: | 1219 | Pack:Cargo Packing Instruction: | 307 |
| IMO Class: | 3.2**:** | Cargo Max. Quantity/Pack: | 60L |

| Section 15. Regulatory Information | |
|---|---|
| Labelling Information | Dangerous Substances Directive 67/548/EEC, as modified. |
| Indication of danger: | |
| Contains: | |
| Risk phrases: | HIGHLY FLAMMABLE / F  / IRRITANT / Xi  |
| Safety phrases: | Label Name: Propan-2-OL (Isopropyl Alcohol).<br>R11 - Highly Flammable R36 - Irritating to Eyes<br>SO7 - Keep Container Tightly Closed. S16 - Keep away from sources of ignition - NO SMOKING.<br>S25 - Avoid Contact with eyes. S43B - In case of fire use sand, earth, chemical powder or alcohol type foam. |

| Section 16. Other Information | |
|---|---|
| Recommended uses and restrictions: | The information on IPA eye irritancy has been communicated in 1990 to Competent Authorities in the European Union together with a proposal to change the classification of this substance to: Xi (Irritant), R36 (Irritating to eyes).<br>The classification of IPA as shown on the labels is in concurrence with our proposal. |
| Publications references: | |

| Section 17. Revision Dates | |
|---|---|
| Revised Date / Initials/Replacing: | July 2012 / VHM . All previous health and safety datasheets |
| Legend: | N/A = Not applicable or available at time of printing. N/D = Not determined or not determinable.<br>Est. = Estimated |

The information and recommendations on this sheet relate to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. The information is given in good faith and to the best of Warton Metals Ltd knowledge, and believed accurate and reliable at the time of preparation. Nothing herein is to be construed as a guarantee, express or implied in all cases it is the responsibility of the user to determine the applicability /suitability of this information or products for the purpose.