# Ultrapure High-Reliability Extruded Solder

Solder for Lead-bearing and Lead-free Alloys

## Product Description

For soldering applications which require maximum reliability of solder joints, especially for surface mounted components, only solder of the highest purity is acceptable. Kester does not make any vague claims of outstanding solder purity. Complete analysis of Kester bar and wire solders prove that every batch conforms to the strictest quality control standards in the solder industry.

### Maximum Allowed Impurities

Ultrapure meets the requirements of current industry standards for allowable impurity requirements.

| Element | J-STD-006C | Kester Ultrapure (Lead-Free) | Kester Ultrapure (Leaded) |
|---|---|---|---|
| Tin | Component | Balance | 63.500 |
| Lead | 0.070 or Component | 0.070 | Balance |
| Antimony | 0.200 or Component | 0.200 | 0.200 |
| Copper | 0.080 or Component | 0.080 | 0.080 |
| Gold | 0.050 | 0.050 | 0.050 |
| Aluminum | 0.005 | 0.005 | 0.005 |
| Cadmium | 0.002 | 0.002 | 0.002 |
| Zinc | 0.003 | 0.003 | 0.003 |
| Silver | 0.100 or Component | 0.100 | 0.100 |
| Bismuth | 0.100 | 0.100 | 0.100 |
| Arsenic | 0.030 | 0.030 | 0.030 |
| Iron | 0.020 | 0.020 | 0.020 |
| Indium | 0.100 | 0.100 | 0.100 |
| Nickel | 0.010 | 0.010 | 0.010 |

Ultrapure will conform to these requirements when purchased directly or through stocking distributors. Kester is the only manufacturer of Ultrapure quality solder. Ultrapure conforms to the requirements of J-STD-006C formerly QQ-S-571F. DOD-STD-2000-1A (Soldering Technology, High Quality/High Reliability) states that it is the responsibility of the manufacturer to select those materials and processes that will produce acceptable high quality/high reliability products. Except where otherwise indicated, the component elements in each alloy shall deviate

from their nominal mass percent- age by not > 0.10% of the alloy mass when their nominal percentage is ≤ 1.0%; by not > 0.20% of the alloy mass when their nominal percentage is > 1.0% to ≤ 5.0% or by not > 0.50% when their nominal percentage is > 5.0%.

## Availability Alloy

Ultrapure meets the requirements of current industry standards for allowable impurity requirements. Below is a list of typical leaded and lead-free alloys produced by Kester in bar and wire form. Other alloys can be produced and follow the same requirements.

| Leaded Alloys | Meting Point |
|---|---|
| Sn62Pb36Ag2 | 179 to 183 °C (354 to 361 °F) |
| Sn63Pb37 | 183 °C (361 °F) |
| Sn60Pb40 | 183 to 190 °C (361 to 374 °F) |
| Sn10Pb88Ag2 | 268 to 299 °C (514 to 570 °F) |
| Sn5Pb92.5Ag2.5 | 280 °C (536 °F) |

| Lead-Free Alloys | Meting Point |
|---|---|
| Sn96.5Ag3.0Cu0.5 | 217 to 220 °C (423 to 428 °F) |
| Sn96.5Ag3.5 | 221 °C (430 °F) |
| Sn97Ag3 | 221 to 224 °C (430 to 435 °F) |
| K100LD | ~227 °C (441 °F) |
| Sn99.3Cu0.7 | 227 °C (441 °F) |
| Sn100 | 232 °C (450 °F) |
| Sn95Sb5 | 232 to 240 °C (450 to 464 °F) |

## Storage, Handling and Shelf Life

Storage must be in a dry, non-corrosive environment between 10 to 40 °C (50 to 104 °F). The surface may lose its shine and appear a dull shade of grey. This is a surface phenomenon and is not detrimental to product functionality. Solder bar has a shelf life determined by the alloy used in the bar. For alloys containing more than 70% lead, the shelf life is 2 years from the date of manufacture. Other alloys have a shelf life of 3 years from the date of manufacture.

## Health and Safety

This product, during handling or use, may be hazardous to your health or the environment. Read the Safety Data Sheet and warning label before using this product. Safety Data Sheets are available at https://www.kester.com/downloads/sds.

## Contact Information

To confirm this document is the most recent version, please contact Assembly@MacDermidAlpha.com


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Also read carefully warning and safety information on the Safety Data Sheet. This data sheet contains technical information required for safe and economical operation of this product. READ IT THOROUGHLY PRIOR TO PRODUCT USE. Emergency safety directory assistance: US 1 202 464 2554, Europe + 44 1235 239 670, Asia + 65 3158 1074, Brazil 0800 707 7022 and 0800 172 020, Mexico 01800 002 1400 and (55) 5559 1588

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