

PRODUCT DESCRIPTION

HYDX provides the following product characteristics:

Technology	Cored solder wire
Application	Water cleanable soldering

FEATURES AND BENEFITS

- Rapid soldering of most difficult to solder metals
- Fast wetting
- Solders difficult surfaces
- Good activity on nickel and nickel plating
- Water washable, no need for added neutralisers
- No insoluble residues
- No spitting
- Residues must be removed

PRODUCT RANGE

HYDX cored wires are manufactured with a nominal flux content of 2%. HYDX cored wires are available in a variety of alloys conforming to J-STD-006 and EN 29453 or alloys conforming to similar national or international standards. For details refer to document "Properties of Alloys used in Cored Solder Wires". Alternative flux contents and alloys may be manufactured to special order.

TECHNICAL SPECIFICATION

A full description of test methods and detailed test results are available on request.

Alloys: The alloys used for HYDX flux cored solder wires conform to the purity requirements of the common national and international standards. A wide range of wire diameters is available manufactured to close dimensional tolerances. For details refer to document "Properties of Alloys used in Cored Solder Wires".

Flux: HYDX solid flux is based on a blend of water- soluble organic activators. It has a mild characteristic odour and leaves a pale residue.

TYPICAL PROPERTIES

Solder Alloy

Harima Code	Alloy	Melting Point, °C
Sn63	Sn63Pb37	183
60EN	Sn60Pb40	183-188
96SC	Sn95.5Ag3.8Cu0.7	217
97SC	Sn96.5Ag3Cu0.5	217
99C	Sn99.3Cu0.7	227

Flux Properties

Acid Value, mgKOH/g	185
Halide Content, Cl %	3.0
Classification, J-STD-004	ORM1
Classification, EN 29454-1	2.1.2
Flux Content, %	2.0

APPLICATIONS

HYDX water soluble flux cored solder wires are suitable for use in normal hand soldering operations where the components have been assessed as being able to withstand the necessary washing procedures in water. Strip any insulation back so that flux residues are not trapped during the washing process. Stranded wire should not be used.

RECOMMENDED OPERATING CONDITIONS

Soldering Iron:

Good results should be obtained using a range of tip temperatures. However, the optimum tip temperature and heat capacity required for a hand soldering process is a function of both soldering iron design and the nature of the task and care should be exercised to avoid unnecessarily high tip temperatures for excessive times. A high tip temperature will increase any tendency to flux spitting and it may produce some residue darkening. The soldering iron tip should be properly tinned and this may be achieved using HYDX cored wire. Severely contaminated soldering iron tips should first be cleaned and pre-tinned using TTC-LF Tip Tinner/Cleaner, then wiped on a clean, damp sponge before re-tinning with HYDX cored wire.

NOT FOR PRODUCT SPECIFICATIONS

THE TECHNICAL INFORMATION CONTAINED HEREIN IS INTENDED FOR REFERENCE YOUR NEAREST HARIMA LOCATION FOR ASSISTANCE AND RECOMMENDATIONS ON SPECIFICATIONS FOR THIS PRODUCT.

Soldering Process:

To achieve the best results from **HYDX** solder wires, recommended working practices for hand soldering should be observed as follows:

- Apply the soldering iron tip to the work surface, ensuring that it simultaneously contacts the base material and the component termination to heat both surfaces adequately. This process should only take a fraction of a second.
- Apply **HYDX** flux cored solder wire to a part of the joint surface away from the soldering iron and allow to flow sufficiently to form a sound joint fillet – this should be virtually instantaneous. Do not apply excessive solder or heat to the joint as this may result in dull, gritty fillets and excessive or darkened flux residues.
- Remove the solder wire from the work piece and then remove the iron tip. The total process will be very rapid, depending upon thermal mass, tip temperature and configuration and the solderability of the surfaces to be joined.
- **HYDX** flux cored solder wires provide fast soldering on copper and brass surfaces as well as solder coated materials. Activity on nickel is also good depending on the state of oxidation of the nickel finish. The good thermal stability of **HYDX** flux means it is also well suited to soldering applications requiring lead free solder alloys.

Cleaning:

It is essential that the residues from soldering with **HYDX** cored solder wires be removed as soon as possible after soldering. The residues from **HYDX** cored solder wires may be readily cleaned in conventional equipment using warm water (minimum 50°C recommended). It is important that the cleanliness of boards and components is thoroughly checked after soldering and cleaning. The usual procedure is to continuously check the conductivity of the final rinse water as a measure of ionic contamination. Samples of cleaned boards should be subjected to a laboratory corrosion test, insulation resistance test, or ionic contamination assessment.

STORAGE AND SHELF LIFE**Storage:**

It is recommended to store **HYDX** in a dry environment at room temperature.

Shelf Life:

The cored solder wire is classified as a non-shelf life item. Thus, no expiry date is required to be printed on the labels. However, the quality and manufacturing records for cored solder wire is only maintained no longer than 2 years from the date of manufacture. Thus, any quality feedback after that stipulated period cannot be addressed.

DATA RANGES

The data contained herein may be reported as a typical value and/or a range. Values are based on actual test data and are verified on a periodic basis.

GENERAL INFORMATION

For safe handling information on this product, consult the Material Safety Data Sheet (MSDS).

Not for Product Specifications

The technical information contained herein is intended for reference only. Please contact your nearest HARIMA location for assistance and recommendations on specifications for this product.

Conversions

$(^{\circ}\text{C} \times 1.8) + 32 = ^{\circ}\text{F}$
 $\text{kV/mm} \times 25.4 = \text{V/mil}$
 $\text{mm} / 25.4 = \text{inches}$
 $\mu\text{m} / 25.4 = \text{mil}$
 $\text{N} \times 0.225 = \text{lb}$
 $\text{N/mm} \times 5.71 = \text{lb/in}$
 $\text{N/mm}^2 \times 145 = \text{psi}$
 $\text{MPa} \times 145 = \text{psi}$
 $\text{N}\cdot\text{m} \times 8.851 = \text{lb}\cdot\text{in}$
 $\text{N}\cdot\text{m} \times 0.738 = \text{lb}\cdot\text{ft}$
 $\text{N}\cdot\text{mm} \times 0.142 = \text{oz}\cdot\text{in}$
 $\text{mPa}\cdot\text{s} = \text{cP}$

Disclaimer

The information provided in this Technical Data Sheet (TDS) including the recommendations for use and application of the product are based on our knowledge and experience of the product as at the date of this TDS. The product can have a variety of different applications as well as differing application and working conditions in your environment that are beyond our control. HARIMA is, therefore, not liable for the suitability of our product for the production processes and conditions in respect of which you use them, as well as the intended applications and results. We strongly recommend that you carry out your own prior trials to confirm such suitability of our product. Any liability in respect of the information in the Technical Data Sheet or any other written or oral recommendation(s) regarding the concerned product is excluded, except if otherwise explicitly agreed and except in relation to death or personal injury caused by our negligence and any liability under any applicable mandatory product liability law.

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