



## TECHNICAL INFORMATION SHEET

### HARRIS 170 NICKLE SILVER BRAZE WELDING ROD

#### NOMINAL CHEMICAL COMPOSITION%:

Tin	3.0 max.
Copper	46.0 – 50.0
Nickel	9.00 – 11.0
Phosphorus	0.25 max.
Silicon	0.04 - 0.25
Zinc	Remainder
Others(total)	0.50 max.

#### TYPICAL PHYSICAL PROPERTIES:

Solidus	1690°F (921°C)
Liquidus	1715°F (935°C)
Brazing Range	1720°F- 1800°F (940°C -980°C)

#### DESCRIPTION:

Harris 170 Nickel Silver is a copper, nickel and zinc braze welding rod. Designed for overlays and build-up on gear teeth, shafts, bearings, valve seats, pistons, and other surfaces subject to wear. Also provides high strength when used to braze/weld ferrous metals, steel, cast iron and stainless steel.

#### RECOMMENDED PROCEDURE:

Clean all areas to be joined or built-up thoroughly. Paint weld are with Nickel Silver brazing flux. Using a neutral flame, heat the part until the flux liquefies. The flux can also be applied directly to the rod, by heating the rod and dipping it into the powdered flux. Add a drop of the alloy and flow it out using the torch flame. If a large area is to be surfaced or several passes are required to restore the part to the original size, Harris 170 or Nickel Silver flux coated rods should be used. There is no need to remove the flux between passes. The torch should be held at a low angle to prevent excessive heat build-up in the part. When working on cast iron, bonding qualities can be improved by first searing the surface with a strong oxidizing flame.

#### AVAILABLE FORMS:

Rods bare and flux coated Cut lengths 36" long.

#### CORROSION RESISTANCE:

Corrosion resistance is higher than most high zinc brass alloys. Care should be taken in service conditions where water immersion is involved as dezincification is a potential issue.

#### RECOMMENDED FLUX:

Harris stocks two brazing flux for the Harris 170.

**Harris 600 Powder Flux** sold in one lbs. containers. Harris 170 can be applied by slightly heating the end of the rod with the flame. Then dipped the rod in the flux this is referred to as "hot-rodding". You can also mix Harris 600 flux with water to form a paste.

**Harris 17 paste flux** sold in half pound container, apply with an acid brush or plumber's brush.

#### SPECIFICATION COMPLIANCE:

AWS A5.8 RBCuZn-D, ASME SFA 5.8 RBCuZn-D,

#### SAFETY INFORMATION:

**WARNING: PROTECT yourself and others. Read and understand this information.**

**FUMES AND GASES can be hazardous to your health.**

**HEAT RAYS, (infrared radiation) from flames or hot metal can injure eyes.**

- Before use, read and understand the manufacturer's instructions, Safety Data Sheets (SDS), and your employer's safety practices.
- Keep your head out of fumes.
- Use enough ventilation, exhaust at the flame, or heat source, to keep fumes and gases from your breathing zone and the general area.
- Wear correct eye, ear, and body protection.
- See American National Standard Z49.1, *Safety in Welding, Cutting, and Allied Processes*, published by the American Welding Society, 8669 Doral Blvd., Doral, Florida 33166; OSHA Safety and Health Standards, available from the U.S. Government Office, Washington, DC 20402.

#### STATEMENT OF LIABILITY- DISCLAIMER:

Any suggestion of product applications or results is given without representation or warranty, either expressed or implied. Without exception or limitation, there are no warranties of merchantability or of fitness for a particular purpose or application. The user must fully evaluate every process and application in all aspects, including suitability, compliance with applicable law and non-infringement of the rights of others. The Harris Products Group and its affiliates shall have no liability in respect thereof.

#### THE HARRIS PRODUCTS GROUP

A LINCOLN ELECTRIC COMPANY 

4501 Quality Place • Mason, OH 45040 U.S.A Tel: 513-754-2000 Fax: 513-754-6015  
Additional information available at our web site: [www.harrisproductsgroup.com](http://www.harrisproductsgroup.com)