



## SAFETY DATA SHEET

### Section 1: Identification of the Substance/Mixture and of the Company Undertaking

#### 1.1 Product identifier

**Product Name:** Series 400, Leaded Water Soluble Solder Paste  
**Product Codes:** Leaded Water Soluble Solder Paste  
**Synonym:** Solder Paste, Solder Cream, SolderPlus®, PrintPlus®  
**Manufacturer MSDS Number:** Template B

#### 1.2. Relevant identified uses of the substance or mixture and uses advised against

**Product Restrictions:** Solder paste

#### 1.3 Supplier's details

**Manufacturer Name:** Nordson EFD LLC  
**Manufacturer Address 1:** 40 Catamore Boulevard  
**Manufacturer City:** East Providence  
**Manufacturer State:** Rhode Island  
**Manufacturer Zip Code:** 02914  
**Manufacturer Country:** USA  
**Business Phone:** +1-401-431-7000

#### 1.4 Emergency phone number

**Emergency Phone:** Chemtrec (Transportation) +1-800-424-9300 Outside USA +1-703-527-3887  
**Revision Date:** 2016-05-04 18:49:15

### Section 2: Hazards Identification

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#### 2.1 Classification of the substance or mixture

##### 2.1.1. Classification according to Regulation (EC) No 1272/2008 [CLP]

**GHS Class Phrases:** Specific Target Organ Toxicity -STOT Repeated exposure RE Category 1 (Central and peripheral nervous systems, the kidneys, and the blood system. ).  
 Reproductive toxicity Category 1A  
 Carcinogenicity Category 2  
 Germ cell mutagenicity Category 2  
 Eye Irritation Category 2  
 Hazardous to the aquatic environment, short term, acute Category 1  
 Hazardous to the aquatic environment, long-term, chronic Category 1

#### 2.2 Label elements:



**Signal Words:** DANGER.  
**Hazard Statements:** Causes damage to organs through prolonged or repeated exposure.  
 May damage fertility or the unborn child.  
 Suspected of causing cancer.  
 Suspected of causing genetic defects.  
 Causes serious eye irritation.  
 Very toxic to aquatic life.  
 Very toxic to aquatic life with long lasting effects.

**Precautionary Statements:** Obtain special instructions before use.  
 Do not handle until all safety precautions have been read and understood.  
 Do not breathe dust/fume/gas/mist/vapours/spray.

Wash hands thoroughly after handling.  
 Do not eat, drink or smoke when using this product.  
 Avoid release to the environment.  
 Wear protective gloves/protective clothing/eye protection/face protection.  
 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
 IF exposed or concerned: Get medical advice/attention.  
 Get medical advice/attention if you feel unwell.  
 If eye irritation persists: Get medical advice/attention.  
 Collect spillage.  
 Store locked up.  
 Dispose of contents/container in accordance with Local, State, Federal and Provincial regulations.

### 2.3 Other hazards

#### Other Potential Health Effects:

Exposures to soldering fumes and vapors may be irritating to eyes, respiratory system, and skin.

## Section 3: Composition/Information on Ingredients

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### 3.2 Mixtures:

Ingredient Name	CAS Number	Ingredient Percent	EC Number	Comments
Tin	7440-31-5	18 - 55.5		
Citric acid	77-92-9	0 - 1		
Skin_Irrit_2   Eye_Dam_1   STOTSE3				
Bismuth	7440-69-9	0.1 - 2.5		
Silver	7440-22-4	0 - 1.8		
Acute_Oral_4   AquaAc_1   AquaCh_1				
Lead	7439-92-1	6.4 - 77.5		
Mutagen_2   Carcino_2   Repro_1A   STOTRE1   AquaAc_1   AquaCh_1				
Malic acid	6915-15-7	0 - 1.4		
Acute_Oral_4   Skin_Irrit_2   Eye_Irrit_2				

#### Notes from Section 3:

Alloy	Tin %	Lead %	Silver %	Copper %	Antimony %	Bismuth %
Pb92.5	5	92.5	2.5	-	-	-
Sn10	10	88	2	-	-	-
Sn43	43	43	-	-	-	14
Sn5	5	95	-	-	-	-
Sn60	60	40	-	-	-	-
Sn62	62	36	2	-	-	-
Sn63	63	37	-	-	-	-

## Section 4: First Aid Measures

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### 4.1 Description of first aid measures

<b>Eye Contact:</b>	Immediately flush eyes with plenty of water for 15 to 20 minutes. Get medical attention, if irritation or symptoms of overexposure persists.
<b>Skin Contact:</b>	Immediately wash skin with soap and plenty of water. Get medical attention if irritation develops or persists.
<b>Inhalation:</b>	If inhaled, remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Seek immediate medical attention.
<b>Ingestion:</b>	If swallowed, do NOT induce vomiting. Call a physician or poison control center immediately. Never give anything by mouth to an unconscious person.

### 4.2 Most important symptoms and effects, both acute and delayed

**Other First Aid:** Exposures to soldering fumes and vapors may be irritating to eyes, respiratory system, and skin.

#### 4.3 Indication of immediate medical attention and special treatment needed

**Note To Physicians:** Provide general supportive measures and treat symptomatically.

### Section 5: Firefighting Measures

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#### 5.1 Extinguishing media

**Extinguishing Media:** Use alcohol resistant foam, carbon dioxide, dry chemical, or water fog or spray when fighting fires involving this material.

#### 5.2 Special hazards arising from the substance or mixture

**Hazardous Combustion Byproducts:** May form carbon monoxide, carbon dioxide or other toxic fumes. At high temperatures, metallic vapors may be liberated.

**Unusual Fire Hazards:** Flux in solder may burn if soldering is done with a flame

**Sensitivity To Impact:** Do not use a solid water stream as it may scatter and spread fire.

#### 5.3 Advice for firefighters

**Protective Equipment:** As in any fire, wear Self-Contained Breathing Apparatus (SCBA), MSHA/NIOSH (approved or equivalent) and full protective gear.

### Section 6: Accidental Release Measures

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#### 6.1 Personal precautions, protective equipment and emergency procedures

**Personnel Precautions:** Evacuate area and keep unnecessary and unprotected personnel from entering the spill area. Avoid inhaling vapors, mists, or fumes. Avoid contact with skin, eyes and clothing.

#### 6.2 Environmental precautions

**Environmental Precautions:** Avoid runoff into storm sewers, ditches, and waterways.

#### 6.3 Methods and materials for containment and cleaning up

**Methods for Containment:** Melted solder will solidify on cooling and can be scraped up.

**Methods for Cleanup:** Solidified solder can be scraped up upon cooling. Use caution to avoid breathing fumes if a gas torch is used to cut up large pieces.

#### 6.4 Reference to other sections

**Other Spill Precautions:** Refer to Section 8 for information on personal protection equipment.

### Section 7: Handling and Storage

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#### 7.1 Precautions for safe handling

**Handling:** Use with adequate ventilation. Avoid breathing vapor and fumes. Use only in accordance with directions.

**Special Handling:** Do not use in areas without adequate ventilation.

**Hygiene Practices:** Avoid inhaling vapors, mists, or fumes. Wash thoroughly after handling.

#### 7.2 Conditions for safe storage, including any incompatibilities

**Storage:** Store between 4° and 10°C (40° and 50°F). Keep container closed. Do not store with foodstuffs

#### 7.3 Specific end use(s)

### Section 8: Exposure Controls/Personal Protection

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#### 8.1 Control parameters

##### Exposure Guidelines - Ingredient Based:

**Tin:**

OSHA:	PEL-TWA: 2 mg/m <sup>3</sup>
<b>Silver:</b>	
OSHA:	PEL-TWA: 0.01 mg/m <sup>3</sup>
<b>Lead:</b>	
ACGIH:	TLV-TWA: 0.05 mg/m <sup>3</sup>
OSHA:	PEL-TWA: 0.05 mg/m <sup>3</sup>

## 8.2 Exposure controls

<b>Engineering Controls:</b>	Use appropriate engineering control such as process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Where such systems are not effective wear suitable personal protective equipment, which performs satisfactorily and meets OSHA or other recognized standards. Consult with local procedures for selection, training, inspection and maintenance of the personal protective equipment.
<b>Eye Protection:</b>	Safety glasses with side-shields.
<b>Hand Protection:</b>	Wear appropriate protective gloves. Consult glove manufacturer's data for permeability data.
<b>Respiratory Protection:</b>	When ventilation is not sufficient to remove fumes from the breathing zone, a safety approved respirator or self-contained breathing apparatus should be worn.
<b>Hygiene Practices:</b>	Avoid inhaling vapors, mists, or fumes. Wash thoroughly after handling.

## Section 9: Physical and Chemical Properties

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### 9.1 Information on basic physical and chemical properties

#### Physical and chemical properties

<b>Color:</b>	Grey
<b>Odor:</b>	Mild.
<b>pH:</b>	Not determined.
<b>Melting Temperature:</b>	> 100 °C (> 212 °F)
<b>Boiling Temperature:</b>	124-198°C (255 - 388 deg F)
<b>Flash Point:</b>	> 76 °C (>169 °F)
<b>Ignition Temperature:</b>	Not determined.
<b>Lower Flammable Limit:</b>	Not determined.
<b>Upper Flammable Limit:</b>	Not determined.
<b>Vapor Pressure:</b>	Not determined.
<b>Vapor Density:</b>	Not determined.
<b>Density:</b>	>4 g/cm <sup>3</sup> (@ 20 °C (68 °F))
<b>Solubility:</b>	Insoluble
<b>Evaporation Rate:</b>	Not determined.
<b>Partition Coefficient:</b>	Not determined.
<b>Percent Volatile:</b>	Not determined.
<b>VOC Content:</b>	Not determined.
<b>Expansion Ratio:</b>	400-1000kcPs

### 9.2 Other information

<b>Note from Section 9:</b>	None.
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## Section 10: Stability and Reactivity

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**10.1 Reactivity**

**Reactivity:** Not applicable.

**10.2 Chemical Stability**

**Chemical Stability:** Stable under normal temperatures and pressures.

**10.3 Possibility of hazardous reactions**

**Hazardous Polymerization:** Not reported.

**10.4 Conditions To Avoid**

**Conditions To Avoid:** High temperatures, high humidity

**10.5 Incompatible Materials**

**Incompatible Materials:** May react with concentrated acids. Silver is incompatible with hydrogen peroxide and reacts with diluted nitric acid and concentrated sulfuric acid

## Section 11: Toxicological Information

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**11.1 Information on toxicological effects****Citric acid:**

**Eye Toxicity:** Administration into the eye - Rabbit Standard Draize test: 750 ug/24H [Severe] (RTECS)

**Ingestion Toxicity:** Oral - Rat LD50 - Lethal dose, 50 percent kill: 3 gm/kg [Details of toxic effects not reported other than lethal dose value]  
Oral - Rat LD50 - Lethal dose, 50 percent kill: 11700 mg/kg [Behavioral - Ataxia Cardiac - Change in rate Lungs, Thorax, or Respiration - Respiratory depression] (RTECS)

**Bismuth:**

**Ingestion Toxicity:** Oral - Rat LD50 - Lethal dose, 50 percent kill: 5 gm/kg [Details of toxic effects not reported other than lethal dose value] (RTECS)

**Malic acid:**

**Eye Toxicity:** Administration into the eye - Rabbit Standard Draize test: 750 ug/24H [Severe] (RTECS)

**Ingestion Toxicity:** Oral - Rat LD50 - Lethal dose, 50 percent kill: 1600 mg/kg [Details of toxic effects not reported other than lethal dose value] (RTECS)

**Potential Health Effects:** Exposures to soldering fumes and vapors may be irritating to eyes, respiratory system, and skin.

**Route of Exposure:** Eyes. Skin. Inhalation. Ingestion.

## Section 12: Ecological Information

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**12.1 Ecotoxicity**

**Ecotoxicity:** Toxic to aquatic life with long lasting effects.

**Effect of Material On Plant/Animal:** In high concentrations, this product may be dangerous to plants and animals.

**12.2 Persistence and degradability**

**Biodegradation:** Flux is biodegradable.

**12.3 Bioaccumulative potential**

**BioAccumulation:** Not determined.

**12.4 Mobility in soil**

**Mobility In Environmental Media:** Not determined.

## Section 13: Disposal Considerations

Template B

### 13.1 Waste treatment methods

**Waste Disposal:** Consult with the US EPA Guidelines listed in 40 CFR Part 261.3 for the classifications of hazardous waste prior to disposal. Furthermore, consult with your state and local waste requirements or guidelines, if applicable, to ensure compliance. Arrange disposal in accordance to the EPA and/or state and local guidelines.

### Section 14: Transport Information

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**DOT Shipping Name:** Not Regulated.  
**DOT UN Number:** Not Regulated.  
**IMDG Shipping Name:** Not Regulated.  
**IMDG UN Number:** Not Regulated.  
**IATA Shipping Name:** Not Regulated.  
**IATA UN Number:** Not Regulated.  
**RID/ADR Shipping Name:** Not Regulated.  
**RID/ADR UN Number:** Not Regulated.

### Section 15: Regulatory Information

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#### 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

##### Regulatory - Product Based:

**Canada WHMIS:** Controlled - Class: D2A Very Toxic

**Canada Reg. Status:** This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by the Controlled Products Regulations.

##### Regulatory - Ingredient Based:

###### Tin:

**Canada DSL:** Listed

**TSCA Inventory Status:** Listed

###### Citric acid:

**Canada DSL:** Listed

**TSCA Inventory Status:** Listed

###### Bismuth:

**Canada DSL:** Listed

**TSCA Inventory Status:** Listed

###### Silver:

**Canada DSL:** Listed

**TSCA Inventory Status:** Listed

**Section 313:** EPCRA - 40 CFR Part 372 - (SARA Title III) Section 313 Listed Chemical.

###### Lead:

**Canada DSL:** Listed

**TSCA Inventory Status:** Listed

**Section 313:** EPCRA - 40 CFR Part 372 - (SARA Title III) Section 313 Listed Chemical.

**Malic acid:**

**Canada DSL:** Listed

**TSCA Inventory Status:** Listed

**15.2 Chemical Safety Assessment**

**Section 16: Additional Information**

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**Revision Date:** 2016-05-04 18:49:15

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**HMIS:**

<b>Health</b>	<b>2</b>
<b>Flammability</b>	<b>1</b>
<b>Reactivity</b>	<b>0</b>
<b>PPE</b>	<b>X</b>

Chronic Health Hazard

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