

# SAFETY DATA SHEET

according to Regulation (EC) No. 453/2010

Brazing Paste



Automation Inc.

Date Issued : 10/21/2014

SDS No : 2HE-G1900-XXX EU

2HE-G1900-XXX

## SECTION 1 : Identification of the substance/preparation and of the company/undertaking

### 1.1. Product identifier

**Product name** : 2HE-G1900-XXX  
**Product description** : See Additional Information for explanation of Product Name.

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

**Relevant identified uses** : Product Type: A braze paste consisting of powdered filler metal suspended in a fluxless binder and used for joining metals by heating the parts to be joined and this product to or above the melting temperature of the filler metal.

### 1.3. Details of the supplier of the safety data sheet

#### Manufacturer

Fusion Automation Incorporated  
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 HARLOW, ESSEX CM19 5FD UNITED KINGDOM  
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#### Additional information

: Product Identification:  
 This MSDS is applicable to all pastes with product codes conforming to the following system:  
 First segment [binder] - second segment [alloy] - third segment [% metal code]  
 See **example** below:

#### ABC-9999-XXX

(1) - (2) - (3)

↑ ↑ ↑

(1) The first segment [the binder code] consists of three letters or a number and two letters.

(2) The middle segment [the alloy code] may appear in basic form [no suffix letter], or with one of several suffix letters.

[Special note: some alloys may also have a prefix letter.]

(3) The last segment consists of 3 characters: the first 2 digits denote the %metal of the paste, the last character will be a letter or numeral.

\*\* Note: This MSDS applies to products containing 60% metal or greater.

## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

#### Classification according to Directive 1999/45/EC

**Danger symbols** : Xn,N  
**R phrases** : R22,R50/53


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

**Health** : Acute Toxicity (Oral), Category 4  
**Environmental** : Acute Hazards to the Aquatic Environment, Category 1  
 Chronic Hazards to the Aquatic Environment, Category 2

**2HE-G1900-XXX****2.2. Label elements****Classification according to Directive 1999/45/EC**


**Hazard pictogram(s)** : Xn N


 Harmful

 Dangerous for the environment

**R&S statement(s)** : R22: Harmful if swallowed.  
 R50/53: Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.  
 S51: Use only in well-ventilated areas.  
 S60: This material and its container must be disposed of as hazardous waste.  
 S61: Avoid release to the environment. Refer to special instructions/safety data sheets.

**Classification according to Regulation (EC) No 1272/2008 [CLP]**

**Hazard pictogram(s)** :  Exclamation mark

 Environment

**Signal Word** : WARNING

**Hazard statement(s)** : H302: Harmful if swallowed.  
 H410: Very toxic to aquatic life with long lasting effects.

**Precautionary statement(s)**

**Prevention** : P264: Wash exposed skin thoroughly after handling.  
 P270: Do not eat, drink or smoke when using this product.  
 P273: Avoid release to the environment.

**Response** : P301+P312: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.  
 P330: Rinse mouth.  
 P391: Collect spillage.

**Disposal** : P501: Dispose of container in accordance with local, regional and national regulations.

**2.3. Other hazards**

**Immediate concerns** : Fumes from the soldering/brazing process are irritating to the eyes and respiratory system. Hot metal can cause eye and skin burns. Avoid breathing fumes from the soldering/brazing process. Use only with adequate ventilation.

**SECTION 3: Composition / information on ingredients****3.1. Substances**

Not Applicable

**3.2. Mixtures**

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Chemical Name	CAS No.	EINECS No.	Wt. %	Classification according to Directive 67/548/EEC	Classification according to Regulation (EC) No 1272/2008 [CLP]
Copper	7440-50-8	231-159-6	60 - 95	Xn;N; R22;R50/53	Acute Tox. (O), Cat. 4; Aquatic Acute, Cat. 1; Aquatic Chronic, Cat. 2; H302; H410

**Additional information** : G1900 Alloy: Filler Metal Composition [nominal]:

Element      Weight%

Copper	100
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The specific chemical identity of the flux/binder formulation ingredients are being withheld as a trade secret. Disclosure will be provided to medical personnel in the event of an emergency. See Section 8 for exposure limits of hazardous ingredients [where applicable].

For full text of H-statements and R-phrases: see SECTION 16.

#### SECTION 4: First aid measures

##### 4.1. Description of first aid measures

- Following eye contact** : Remove contact lenses. Hold eyelids apart. Immediately flush eyes with plenty of low-pressure water for at least 15 minutes. Get medical attention if irritation persists.
- Following skin contact** : Immediately remove contaminated clothing. Do not attempt to remove any material bonded to the skin. Flush area of skin contact immediately with large amounts of water for at least 15 minutes. If irritation persists after flushing, get medical attention promptly. Launder contaminated clothing before reuse.
- Following ingestion** : If swallowed: Do not induce vomiting unless instructed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately.
- Following inhalation** : Remove victim to fresh air. If not breathing, trained personnel may give artificial respiration. If breathing is difficult, give oxygen by trained personnel. Seek medical attention.

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

- Eyes** : Eye contact may cause: irritation.
- Skin** : Hot molten metal may cause burns to the skin.
- Ingestion** : If swallowed, this product may cause gastrointestinal discomfort, nausea, vomiting.
- Inhalation** : Inhalation of powder, dust or fumes may be irritating to the respiratory system. Inhalation of some metals may cause Metal Fume Fever: See section 11.

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

- Notes to physician** : No specific instructions known. Treat symptomatically.

#### SECTION 5: Fire fighting measures

##### 5.1. Extinguishing media

- Extinguishing media** : For fires involving this product, use dry chemical, carbon dioxide, foam, water spray. Do not use water if metal is molten.

**2HE-G1900-XXX****5.2. Special hazards arising from the substance or mixture**

- General hazard** : During the soldering/brazing process, Hazardous decomposition products may be released: See section 10.
- Explosion hazards** : This material is classed as a non-flammable solid. Not considered a fire hazard.

**5.3. Advice for firefighters**

- Fire fighting procedures** : Move container from fire area if it can be done without risk. Avoid inhalation of vapors or mists.
- Fire fighting equipment** : Exposure to decomposition products may be a hazard to health. Do not breathe smoke, gases or vapors generated. Wear goggles if eye protection is not provided. Wash away any material that comes into contact with the body, clothing or equipment. When fighting fires involving this product, wear full protective gear. For fires in enclosed areas, fire fighters must use self-contained breathing apparatus.

**SECTION 6: Accidental release measures****6.1. Personal precautions, protective equipment and emergency procedures**

- General procedures** : Waste disposal method: Scoop up excess material and wash affected areas with soap and water. Avoid contact with skin and eyes. Collect material into sealed and labeled containers for disposal. Clean contaminated surface thoroughly. Dispose in accordance with federal, state and local regulations.
- Special protective equipment** : Avoid inhaling vapor and/or mists. Do not get spilled material on skin, clothing, or in eyes. Wear full protective clothing. See Section 8. Remove all contaminated clothing.

**6.2. Environmental precautions**

- Water spill** : Not Available
- Land spill** : Not Available
- Air spill** : Not Available

**6.3. Methods and material for containment and cleaning up**

- Large spill** : Recover spilled material. Reclaim this material whenever possible. Collect material into sealed and labeled containers for reclamation or disposal.

**6.4. Reference to other sections**

- Reference to other sections** : See Section 8 for Personal Protective Equipment
- See Section 13 for Product Disposal considerations

**SECTION 7: Handling and storage****7.1. Precautions for safe handling**

- Handling** : Keep away from sources of ignition.
- Storage** : Keep lid tightly closed except when removing product.

**7.2. Conditions for safe storage, including any incompatibilities**

- Storage temperature** : 5°C (41°F) Minimum to 25°C (77°F) Maximum
- Shelf life** : See specification sheet or container label.

**7.3. Specific end use(s)**

- Specific end use(s)** : Solder or Braze Paste for joining metals.

**SECTION 8: Exposure controls / personal protection****8.1. Control parameters**

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CAS No.	Chemical Name	--	UK WEL (EH40/2005)
7440-50-8	Copper	LTEL (TWA)	0.2 mg/m <sup>3</sup> [fume, as Cu] Respirable Dust - 1 mg/m <sup>3</sup> [dusts & mists, as Cu]
		STEL	2 mg/m <sup>3</sup> [dusts & mists, as Cu]

**8.2. Exposure controls**

<b>Engineering controls</b>	: The use of local ventilation is required to maintain the concentration of fumes evolved from the soldering/brazing process to well below the occupational exposure limits, within the operator's breathing zone and the general vicinity. Use of process enclosures, exhaust systems, and other engineering/administrative controls should be designed in accordance with local conditions. Please refer to the ACGIH document, Industrial Ventilation, A Manual of Recommended Practices [most recent edition], for details.
<b>Eye/face protection</b>	: Wear safety glasses with side shields as a minimum level of protection. Consult ANSI Z87.1 for more information.
<b>Skin protection</b>	: Wear chemical resistant gloves. When material is heated, wear thermal-insulated gloves to protect against burns.
<b>Respiratory protection</b>	: When exposure limits (listed above) are exceeded or ventilation is inadequate, wear a NIOSH or European Standard approved respirator, in accordance with OSHA respirator regulations [29 CFR 1910.134] or European Standards [EN149]. Consult ANSI Z88.2 <i>American National Standard for Respiratory Protection</i> for guidance on proper selection, use and care of respirators.
<b>Protective clothing</b>	: Avoid skin contact. Wear chemical resistant clothing ( long-sleeved shirt buttoned at the wrist) as necessary to prevent contact. For soldering/brazing operations where hot metallic parts are handled and molten metal may be present, wear heat-resistant gloves and clothing to protect from burns.
<b>Work hygienic practices</b>	: Minimize exposure in accordance with good hygiene practice. Good general hygienic practices include: Eating, drinking, and smoking should not be permitted in work areas. Wash thoroughly after handling, and before eating, drinking, using tobacco, applying cosmetics, or using the toilet. Keep area clean. Remove contaminated clothing promptly. Launder contaminated clothing before reuse. Avoid contact with eyes, skin, and clothing. Avoid breathing dust, vapor or mist.
<b>Other precautions</b>	: Educate and train employees in the safe use and handling of this product.
<b>Additional information</b>	: See American National Standard ANSI Z49.1, <i>Safety in Welding, Cutting and Allied Processes</i> , published by the American Welding Society, 550 N.W. LeJeune Road, Miami, FL 33126; OSHA <i>Safety and Health Standards</i> , 29 CFR 1910, available from the U.S. Government Printing Office, Superintendent of Documents, P.O. Box 371954, Pittsburgh, PA 15250-7954.

**SECTION 9: Physical and chemical properties****9.1. Information on basic physical and chemical properties**

<b>Appearance</b>	: Viscous paste
<b>Colour</b>	: Copper
<b>Odour</b>	: Characteristic odor.
<b>pH</b>	: Not Applicable
<b>Melting temperature</b>	: G1900 Filler Metal: 1082°C [1980°F]
<b>Boiling temperature</b>	: 550°F [288°C] [for C563]
<b>Flash point</b>	: Not Applicable
<b>Evaporation rate</b>	: No data available
<b>Flammable limits</b>	: LEL/UEL: Not Determined

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Vapor pressure	: 3 mm Hg at 68°F/20°C [for C563]
Vapor density	: 3.1 [air=1] [for C563]
Specific gravity	: > 2 (water=1)
Solubility in water	: Partially Soluble
Auto-ignition temperature	: Not Determined

**9.2. Other information**

Additional information	: Not Available
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**SECTION 10: Stability and reactivity****10.1. Reactivity**

Stable	: Yes
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**10.2. Chemical stability**

Chemical stability	: Stable under normal conditions of use.
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**10.3. Possibility of hazardous reactions**

Hazardous Polymerization	: No
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**10.4. Conditions to avoid**

Conditions to avoid	: Avoid contact with incompatible materials. Avoid extreme heat. Avoid prolonged exposure to air and moisture.
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**10.5. Incompatible materials**

Incompatible materials	: Materials to avoid: strong acids, strong oxidizers, permanganates, acids, oxidizing agents, alkalies, acetylene, nitric acid, sulfuric acid, bromates, strong bases, ammonia, magnesium, chlorates, iodates.
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**10.6. Hazardous decomposition products**

Hazardous decomposition products	: Decomposition products may include, but are not limited to: carbon oxides (CO, CO <sub>2</sub> ), acrolein, smoke. Metallic decomposition products may include: copper fume.
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**SECTION 11: Toxicological information****11.1. Information on toxicological effects****Acute**

Chemical Name	Oral LD <sub>50</sub>	Dermal LD <sub>50</sub>	Inhalation LC <sub>50</sub>
Copper	152 mg/kg [rat]	Not established	Not established

**Eyes** : **Binder**: Eye contact may cause: irritation, stinging, tearing, redness, swelling.  
**Alloy**: Can cause irritation and abrasion.

**Skin** : **Binder**: Skin contact may cause: irritation.  
**Alloy**: Hot molten metal may cause burns to the skin. Wear protective equipment when working with molten metal.  
**Copper**: Skin contact may cause irritation and dermatitis.

**Skin absorption** : Not expected to be absorbed through intact skin.

**Ingestion** : **Binder**: No toxic effects are expected following ingestion of small amounts of this product.

**Copper**: Ingestion may cause nausea, vomiting, diarrhea.

**Inhalation** : **Binder**: If inhaled, may cause: irritation of the respiratory tract.

**Copper**: If inhaled, may cause: sneezing, nausea, weakness, fever. Fumes from heating may cause metal fume fever.

**Notes** : If excessive quantities of copper fume are inhaled, it can result in the condition called metal fume fever. The symptoms of metal fume fever will occur within 3 to 10 hours, and include immediate dryness and irritation of the throat, tightness of the chest, and coughing which may later be followed by flu-like symptoms of fever, malaise, perspiration, frontal headache, muscle cramps, low back pain, occasionally blurred vision, nausea, and vomiting. There are no recognized complications, after effects, or

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chronic effects that result from this condition.

<b>Sensitisation</b>	: This material was not made with any components known to be skin or respiratory sensitizers.
<b>Carcinogenicity</b>	: This product was not formulated with any ingredients that are classified as carcinogenic by IARC, NTP, ACGIH, OSHA or the UK HSC.
<b>Mutagenicity</b>	: This material was not made with components identified as being mutagenic.
<b>Reproductive effects</b>	: This material was not made with any components identified as a reproductive toxin.
<b>Target organs</b>	: Affected target organs: respiratory system, skin, lungs, liver, kidneys.

**SECTION 12: Ecological information****12.1. Toxicity**

<b>Toxicity</b>	: Ecological information on this product and its ingredients is not known.
<b>Aquatic toxicity (acute)</b>	: No data available

**12.2. Persistence and degradability**

<b>Persistence and degradability</b>	: No data available
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**12.3. Bioaccumulative potential**

<b>Bioaccumulative potential</b>	: No data available
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**12.4. Mobility in soil**

<b>Mobility in soil</b>	: No data available
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**12.5. Results of PBT and vPvB assessment**

<b>Results of PBT and vPvB assessment</b>	: No data available
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**12.6. Other adverse effects**

<b>General comments</b>	: No data available
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**SECTION 13: Disposal considerations****13.1. Waste treatment methods**

<b>Product disposal</b>	: Disposal of waste material from the use of this product may be subject to federal, state and local regulations. Waste characterizations and compliance with applicable laws are the sole responsibility of the waste generator. Reclaimed scrap metal has monetary value. Contact a commercial reclaimer for information on recycling scrap metals. All recovered material should be packaged, labeled, transported and disposed or reclaimed in conformance with applicable laws and regulations and in conformance with good engineering practices.
<b>Disposal method</b>	: Dispose of in accordance with EC, national and local regulations, or sell to refiner.
<b>Empty container</b>	: Do not reuse empty containers. Dispose of empty container in accordance with EC, national and local regulations.

**SECTION 14: Transport information****14.1. UN number**

<b>UN number</b>	: 3077
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**14.2. UN proper shipping name**

<b>UN proper shipping name</b>	: Environmentally hazardous substances, solid, n.o.s. [copper metal powder]
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**14.3. Transport hazard class(es)**

<b>Primary hazard class/division</b>	: 9 Environmentally Hazardous Substance
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**14.4. Packing group**

<b>Packing group</b>	: III
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**14.5. Environmental hazards**

<b>Marine pollutant</b>	: Copper metal powder
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**14.6. Special precautions for user**

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**ADR - road** : Not Applicable

**14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**

**Transport in bulk** : Not Applicable

**Additional information** : This product is classified for transport per US DOT, ADR/RID, ICAO/IATA, and IMO/IMDG.

**SECTION 15: Regulatory information****15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture**

**RoHS** : This product was not made with any components regulated under the RoHS Directive 2011/65/EU.

**International regulations** :  
**European Union:**  
 This safety datasheet complies with the requirements of Regulations (EC) No. 1907/2006 and No. 1272/2008.

**15.2. Chemical safety assessment**

**Chemical safety assessment** : A Chemical Safety Assessment has not been completed for this material.

**SECTION 16: Other information**

**Relevant R-phrases and/or H-statements (number and full text)** : R22: Harmful if swallowed.  
 R50/53: Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.  
 Aquatic Chronic, Cat. 2: Chronic Hazards to the Aquatic Environment, Category 2  
 H302: Harmful if swallowed.  
 H410: Very toxic to aquatic life with long lasting effects.

**Approved by** : Regulatory Affairs

**Prepared by** : Jerishia D. Fouts

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