Material Safety Data Sheet - MSDS

Section 1. Chemical Product and Company Identification

Product name	Classification	Classification
Blueshield:	**CSA:**	**AWS:**
SUPER BRONZE;	-	RCu Zn-C;
FL BRONZE;	-	RCu Zn-C;
Everdure 656;	-	ERCuSi-A;

Description : BRAZING Copper-Based Rod and Copper Based Alloy.

In case of emergency : 1-514-878-1667

Supplier : Air Liquide Canada Inc.
1250, René-Lévesque West, Suite 1700
Montreal, QC H3B 5E6

Generic Code : **AL-J-005-0**

Date of issue : **01/15/2011**

Section 2. Hazards Identification

Physical state and Appearance : Solid.

Emergency overview : **These hazards relate to welding fumes (electrodes in use) and not to the electrodes as sold.**

WARNING!
ELECTRIC SHOCK can kill.
FUMES AND GASES can be dangerous to your health.
ARC RAYS can injure eyes and burn skin.
MAY BE HARMFUL IF INHALED. MAY CAUSE RESPIRATORY TRACT, EYE AND SKIN IRRITATION. CONTAINS MATERIAL THAT CAN CAUSE TARGET ORGAN DAMAGE.
Do not eat, drink or smoke when using this product. Avoid contact with eyes, skin and clothing. Wash thoroughly after handling.

Routes of entry : Dermal contact. Eye contact. Inhalation.

Potential acute health effects

Eyes : Hazardous by the following route of exposure: of eye contact (irritant). Inflammation of the eye is characterized by redness, watering and itching.

Skin : Hazardous by the following route of exposure: of skin contact (corrosive). Skin contact may produce burns.

Inhalation : Hazardous by the following route of exposure: of inhalation.

Ingestion : Since the product (brazing vapors) is a gas and that it is mostly probable that it will be inhaled more than ingested, please consider first to look at the preventive measures in case of inhalation.

Potential chronic health effects : **Carcinogenic effects(*)**: Not classified or listed by IARC, NTP, OSHA and ACGIH.
MUTAGENIC EFFECTS: Not available.
TERATOGENIC EFFECTS: Not available.

Medical conditions aggravated by over-exposure : Repeated exposure to the vapors emitted while using this material may produce general deterioration of health.

(*) See Abbreviations (section 16).

Section 3. Composition, Information on Ingredients

Name	CAS #	% by weight	UN number
Copper	7440-50-8	56 - 60	Not regulated.
Boric Acid	10043-35-3	>50	Not regulated.
Zinc	7440-66-6	<30	UN1435

The fumes emitted by the electrodes, in use, are hazardous. This MSDS is written for workers using these electrodes.

See Section 8 for Exposure Limits of the oxides found in the welding fumes.

Section 4. First Aid Measures

Eye contact : Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 20 minutes. Get medical attention.

Skin contact : Wash with soap and water. Get medical attention if irritation develops.

Inhalation : If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Ingestion : Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If potentially dangerous quantities of this material have been swallowed, call a physician immediately.

Section 5. Fire Fighting Measures

Flammability of the product : Non-flammable. Emits toxic fumes when heated.

Explosibility : Non-explosive in the presence of the following materials or conditions: open flames, sparks and static discharge, heat and shocks and mechanical impacts.

Fire-fighting media and instructions : Use extinguishing media suitable for surrounding materials.

Section 6. Accidental Release Measures

Small/Large Spill and Leak : Use appropriate tools to transfer the spilled solid to a convenient waste disposal container.

Section 7. Handling and Storage

Handling : Avoid breathing dusts or vapors from burning materials. Use only with adequate ventilation. Avoid contact with eyes, skin and clothing. Do not ingest. Keep container closed. Wash thoroughly after handling.

Storage : All filler metals in their original, unopened containers should be kept in a relatively dry storage area at temperatures between 15°C (60°F) and 30°C (80°F) and 50% maximum relative humidity.

Section 8. Exposure Controls, Personal Protection

Engineering controls : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Personal protection

Eyes : Safety glasses with side shields having minimum shade protection.

Body : Full suit. (Fire resistant.)

Respiratory : Vapor respirator.

Hands : Gloves. (Fire resistant.)

Feet : Metal cap, safety boots.

Occupational exposure limits		TWA (8 hours)			STEL (15 mins)			Ceiling			
Ingredient	**List name**	**ppm**	**mg/m³**	**Other**	**ppm**	**mg/m³**	**Other**	**ppm**	**mg/m³**	**Other**	**Notations**
Copper	US ACGIH 2/2010	-	0.2	-	-	-	-	-	-	-	[a]
		-	1	-	-	-	-	-	-	-	
Copper, as Cu	AB 4/2009	-	1	-	-	-	-	-	-	-	[b][A]
		-	0.2	-	-	-	-	-	-	-	[a][A]
	BC 10/2009	-	1	-	-	-	-	-	-	-	[c][A]
		-	0.2	-	-	-	-	-	-	-	[a][A]
Copper	ON 7/2010	-	1	-	-	-	-	-	-	-	[d]
		-	0.2	-	-	-	-	-	-	-	
Copper, as Cu	QC 6/2008	-	1	-	-	-	-	-	-	-	[e][A]
		-	0.2	-	-	-	-	-	-	-	[f][A]
Boric acid	US ACGIH 2/2010	-	2	-	-	6	-	-	-	-	[g]
	BC 10/2009	-	2	-	-	6	-	-	-	-	[h]
	ON 7/2010	-	2	-	-	6	-	-	-	-	[g]

Form: [a]Fume [b]Dusts and Mists [c]Dusts and mists [d]dust and mists [e]dusts & mists [f]fume [g]Inhalable fraction. See Appendix C, paragraph A. Inhalable Particulate Mass TLVs (IPM–TLVs) for those materials that are hazardous when deposited anywhere in the respiratory tract. [h]Inhalable
Notes: [A]as Cu

Section 9. Physical and Chemical Properties

Physical state and Appearance : Solid.

Color : Brass and green.

Odor : Odorless.

Melting/freezing point : 871°C (1599.8°F)

Specific gravity : Not available.

Solubility : Insoluble in the following materials: cold water, hot water.

Section 10. Stability and Reactivity

Stability and reactivity : The product is stable.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Hazardous polymerization : Under normal conditions of storage and use, hazardous polymerization will not occur.

Section 11. Toxicological Information

Additional Toxicity data

Chronic effects and other toxic effects on humans : **CARCINOGENIC EFFECTS**: See Section 2.
Contains material which causes damage to the following organs: skin, eye, lens or cornea.
Contains material which may cause damage to the following organs: kidneys, lungs, liver, upper respiratory tract.

Acute exposure to brazing vapors may result in discomfort such as: dizziness, nause or dryness of nose, throat or the eyes.

Section 12. Ecological Information

Ecotoxicity data

Product/ingredient name	Result	Species	Exposure
Copper	Acute EC50 4.1 ug/L Fresh water	Crustaceans - Simocephalus vetulus - Juvenile (Fledgling, Hatchling, Weanling) - <48 hours	48 hours
	Acute EC50 1 ug/L Fresh water	Daphnia - Ceriodaphnia dubia - Juvenile (Fledgling, Hatchling, Weanling) - <24 hours	48 hours
	Acute LC50 9.4 ug/L Fresh water	Fish - Pimephales promelas - Juvenile (Fledgling, Hatchling, Weanling) - <1 months	96 hours
	Chronic NOEC 7.43 ug/L Fresh water	Fish - Salmo trutta - IMMATURE - 14 cm - 26.3 g	4 days
Boric acid	Acute LC50 92.83 mg/L Marine water	Crustaceans - Americamysis bahia - Juvenile (Fledgling, Hatchling, Weanling) - <24 hours	48 hours
	Acute LC50 133000 ug/L Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
	Acute LC50 50 to 100 ppm Fresh water	Fish - Oncorhynchus mykiss	96 hours
Zinc	Acute IC50 0.34 mg/L Marine water	Crustaceans - Americamysis bahia - Juvenile (Fledgling, Hatchling, Weanling) - <48 hours	48 hours
	Acute LC50 65 ug/L Fresh water	Daphnia - Ceriodaphnia dubia - Neonate	48 hours
	Acute LC50 2.72 ug/L Fresh water	Fish - Oncorhynchus mykiss - Egg	96 hours
	Chronic NOEC 9.72 ug/L Fresh water	Fish - Salmo trutta - 15.3 cm - 33.5 g	4 days

Products of degradation : Some metallic oxides.

Section 13. Disposal Considerations

Waste information : Waste must be disposed of in accordance with federal, state and local environmental control regulations. Recycle, if possible.

Consult your local or regional authorities.

Section 14. Transport Information

No transport class is found applicable to this product.

Section 15. Regulatory Information

HCS Classification : **These hazards relate to welding fumes (electrodes in use) and not to the electrodes as sold.**

Target organ effects

U.S. Federal regulations : **United States inventory (TSCA 8b):** All components are listed or exempted.

SARA 302/304/311/312 extremely hazardous substances: No products were found.
SARA 302/304 emergency planning and notification: No products were found.
SARA 302/304/311/312 hazardous chemicals: Copper; Zinc; Boric Acid
SARA 311/312 MSDS distribution - chemical inventory - hazard identification: Copper: Immediate (acute) health hazard; Zinc: Fire hazard, Immediate (acute) health hazard, Delayed (chronic) health hazard; Boric Acid: Immediate (acute) health hazard, Delayed (chronic) health hazard

Clean Water Act (CWA) 307: Copper; Zinc

Clean Water Act (CWA) 311: No products were found.

Clean Air Act (CAA) 112 regulated flammable substances: No products were found.

Clean Air Act (CAA) 112 regulated toxic substances: No products were found.

SARA 313

Form R - Reporting requirements :	Copper	> 50
	Zinc	< 30
Supplier notification :	Copper	> 50
	Zinc	< 30

State regulations :

Massachusetts	:	The following components are listed: COPPER; ZINC
New York	:	The following components are listed: Copper; Zinc
New Jersey	:	The following components are listed: COPPER; ZINC
Pennsylvania	:	The following components are listed: COPPER FUME; ZINC

California prop. 65: No products were found.

WHMIS (Canada) : **These hazards relate to welding fumes (electrodes in use) and not to the electrodes as sold.**

Class D-2A: Material causing other toxic effects (Very toxic).
Class D-2B: Material causing other toxic effects (Toxic).

CEPA Toxic substances: None of the components are listed.
Canadian ARET: None of the components are listed.
Canadian NPRI: The following components are listed: Copper; Zinc
Alberta Designated Substances: None of the components are listed.
Ontario Designated Substances: None of the components are listed.
Quebec Designated Substances: None of the components are listed.

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

Section 16. Other Information

Label requirements : See Section 2.

Hazardous Material Information System (U.S.A.) : Health: 2* Fire: 0 Reactivity: 0

National Fire Protection Association (U.S.A.) : Health: 2 Fire: 0 Reactivity: 0 Other: None

References : - 29CFR Part1910.1200 OSHA MSDS Requirements. - 49CFR Table List of Hazardous Materials, UN#, Proper Shipping Names, PG. - Canadian Transport of Dangerous Goods, Regulations and Schedules, Clear Language version 2005. - CRC Handbook of chemistry and physics, 67th edition. CRC Press inc., Boca Raton, Florida. - Manufacturer's Material Safety Data Sheet. ANSI Z400.1, MSDS Standard, 2004. ANSI Z49.1 Safety in Welding and Cutting, The American Welding Society, P.O. Box 351040, Miami, FL 33135. Canadian Standard Association, CSA W117.2, Code for Safety in Welding and Cutting, 2003.

Abbreviations and acronyms : **ACGIH: American Conference of Governmental Industrial Hygiene.**
IARC: International Agency for Research on Cancer.
NIOSH: National Institute of Occupational Safety and Health.
OSHA: Occupational Safety and Health Administration
NTP: National Toxicology program.

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