

(11030)

Section 1. Chemical Product and Company Identification

Product name : Blueshield
Classification :
 BLUESHIELD LA T-3;
 LA UNSHIELD;
 LA T-11;
 LA T14
Description : FCAW - Carbon Steel Flux-Cored Wires, Self-Shielded.
In case of emergency : 1-514-878-1667
Supplier : Air Liquide Canada Inc., 1250, René-Lévesque Ouest, Suite 1700, Montréal, QC H3B 5E6

Classification
AWS:
 E70T-3-H16;
 E70T-4-H16;
 E71T-11-H16/ E71T-GS-H16;
 E71T-14-H16/ E71T-GS-H16;
Generic Code : AL-T-001-0
Date of issue : 01/13/2014

APPROVED MATERIAL
 APR 22 2014
 MSDS # 11030
 APPROVED BY [Signature]

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 such.
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. CAUSES RESPIRATORY TRACT, EYE AND SKIN IRRITATION. CONTAINS MATERIAL THAT MAY CAUSE TARGET ORGAN DAMAGE, BASED ON ANIMAL DATA. POSSIBLE CANCER HAZARD - CONTAINS MATERIAL WHICH MAY CAUSE CANCER, BASED ON ANIMAL DATA.
 Do not handle until all safety precautions have been read and understood. Obtain special instructions before use. Use only with adequate ventilation. Do not eat, drink or smoke when using this product. Avoid contact with eyes, skin and clothing. Keep container tightly closed. Use personal protective equipment as required. Wash thoroughly after handling.

Routes of entry : Dermal contact. Eye contact. Inhalation.
Potential acute health effects
Eyes : Very 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, irritant). Skin contact may produce burns. Severe over-exposure can result in death. Skin inflammation is characterized by itching, scaling, reddening or, occasionally, blistering.
Inhalation : Hazardous by the following route of exposure: of inhalation (lung irritant).
Ingestion : Since the product (welding fumes) 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 :

Carcinogenicity

| Product/ingredient name | ACGIH | OSHA | IARC | NTP | EU |
|-------------------------|-------|------|------|-----|---------------|
| Calcium fluoride | A4 | - | 3 | - | - |
| Barium fluoride | A4 | - | 3 | - | - |
| Titanium dioxide | A4 | - | 2B | - | Carc. 2, H351 |

Mutagenic effects Not available.
Teratogenic effects: Not available.

Medical conditions aggravated by over-exposure : Pre-existing disorders involving any target organs mentioned in this MSDS as being at risk may be aggravated by over-exposure to this product.

(* See Abbreviations (section 16).)

Section 3. Composition, Information on Ingredients

| Name | CAS # | % by weight | UN number |
|------------------|------------|-------------|----------------|
| Iron | 7439-89-6 | 80 - 95 | Not available. |
| Calcium fluoride | 7789-75-5 | 2 - 12 | Not available. |
| Barium fluoride | 7787-32-8 | 1 - 5 | UN3288 |
| Aluminium | 7429-90-5 | 1 - 5 | UN1396 |
| Magnesium | 7439-95-4 | 1 - 3 | Not available. |
| Titanium dioxide | 13463-67-7 | 0.01 - 3 | Not available. |
| Manganese | 7439-96-5 | 0.5 - 2 | Not available. |
| Silicon | 7440-21-3 | 0.01 - 2 | UN1346 |

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. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention immediately.
- Skin contact** : In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention immediately.
- Inhalation** : Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.
- Ingestion** : Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention 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 an extinguishing agent suitable for the surrounding fire.

Section 6. Accidental Release Measures

- Small/Large Spill and Leak** : Use appropriate tools to transfer the spilled solid to a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.

Section 7. Handling and Storage

- Handling** : Avoid contact with eyes. Avoid breathing dust. Do not get on skin or clothing. Keep container closed. Use only with adequate ventilation. 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** : Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Personal protection

- Eyes** : Safety glasses with side shields. Face shield with radiation shielding.
- Body** : Full suit. Fire resistant.
- Respiratory** : Dust respirator. Be sure to use an approved/certified respirator or equivalent. Wear a canister breathing apparatus (respirator) or a supplied-air respirator, when required, to weld in a confined space or when room exhaust or ventilation does not keep exposure below the acceptable values.
- 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 |
| Calcium fluoride, as F | US ACGIH 6/2013 | - | 2.5 | - | - | - | - | - | - | - | |
| | AB 4/2009 | - | 2.5 | - | - | - | - | - | - | - | |
| | BC 7/2013 | - | 2.5 | - | - | - | - | - | - | - | |
| | ON 1/2013 | - | 2.5 | - | - | - | - | - | - | - | |
| | QC 12/2012 | - | 2.5 | - | - | - | - | - | - | - | |
| Barium fluoride, as Ba | US ACGIH 6/2013 | - | 0.5 | - | - | - | - | - | - | - | |
| | AB 4/2009 | - | 0.5 | - | - | - | - | - | - | - | |
| | BC 7/2013 | - | 0.5 | - | - | - | - | - | - | - | |
| Barium fluoride, as F | ON 1/2013 | - | 2.5 | - | - | - | - | - | - | - | |
| | QC 12/2012 | - | 0.5 | - | - | - | - | - | - | - | |
| Barium fluoride, as Ba Aluminium | US ACGIH 6/2013 | - | 1 | - | - | - | - | - | - | - | [a] |
| | AB 4/2009 | - | 10 | - | - | - | - | - | - | - | [3] [b] |
| | BC 7/2013 | - | 1 | - | - | - | - | - | - | - | [c] |
| | ON 1/2013 | - | 1 | - | - | - | - | - | - | - | [a] |
| | QC 12/2012 | - | 10 | - | - | - | - | - | - | - | |
| Aluminium, as Al Titanium dioxide | US ACGIH 6/2013 | - | 10 | - | - | - | - | - | - | - | |
| | AB 4/2009 | - | 10 | - | - | - | - | - | - | - | |
| | BC 7/2013 | - | 3 | - | - | - | - | - | - | - | [d] |
| | ON 1/2013 | - | 10 | - | - | - | - | - | - | - | [e] |
| | QC 12/2012 | - | 10 | - | - | - | - | - | - | - | [f] |
| Manganese, as Mn | US ACGIH 6/2013 | - | 0.1 | - | - | - | - | - | - | - | [g] |
| | US ACGIH 6/2013 | - | 0.2 | - | - | - | - | - | - | - | [h] |
| | AB 4/2009 | - | 0.2 | - | - | - | - | - | - | - | [a] |
| | BC 7/2013 | - | 0.2 | - | - | - | - | - | - | - | |
| | ON 1/2013 | - | 0.2 | - | - | - | - | - | - | - | |
| | QC 12/2012 | - | 1 | - | - | 3 | - | - | - | - | [i] |

| | | | | | | | | | | |
|---------|------------|---|----|---|---|---|---|---|---|-----|
| Silicon | BC 7/2013 | - | 3 | - | - | - | - | - | - | [d] |
| | BC 7/2013 | - | 10 | - | - | - | - | - | - | [e] |
| Iron | ON 1/2013 | - | 10 | - | - | - | - | - | - | [e] |
| | QC 12/2012 | - | 10 | - | - | - | - | - | - | [g] |
| | US ACGIH | - | 10 | - | - | - | - | - | - | [j] |

[3]Skin sensitization

Form: [a]Respirable fraction [b]Metal Dust [c]Respirable [d]Respirable dust [e]Total dust [f]total dust [g]Total dust. [h]Inhalable fraction [i]fume [j]Inhalable particle.

Section 9. Physical and Chemical Properties

Physical state and Appearance : Solid.
 Color : Bluish-grey.
 Odor : Odorless.
 Melting/freezing point : 1540°C (2804°F)
 Specific gravity : Weighted average: 6.59 [Water = 1]
 Solubility : Insoluble in the following materials: cold water and hot water.

Section 10. Stability and Reactivity

Stability and reactivity : The product is stable.
 Hazardous decomposition products : Metallic oxides, carbon oxides (CO, CO₂) Arc radiation can support the production of ozone and nitrogen oxides.
 Hazardous polymerization : Under normal conditions of storage and use, hazardous polymerization will not occur.

Section 11. Toxicological Information

| Product/ingredient name | Result | Species | Dose | Exposure |
|-------------------------|-----------|---------|------------|----------|
| Calcium fluoride | LD50 Oral | Rat | 4250 mg/kg | - |
| Barium fluoride | LD50 Oral | Rat | 250 mg/kg | - |
| Manganese | LD50 Oral | Rat | 9 g/kg | - |
| Silicon | LD50 Oral | Rat | 3160 mg/kg | - |

Chronic effects and other toxic effects on humans : **CARCINOGENIC EFFECTS:** Classified A4 (Not classifiable for humans or animals.) by ACGIH, 3 (Not classifiable for humans.) by IARC [Calcium fluoride]. Classified A4 (Not classifiable for humans or animals.) by ACGIH, 3 (Not classifiable for humans.) by IARC [Barium fluoride]. Classified A4 (Not classifiable for humans or animals.) by ACGIH [Aluminium]. Classified + (Proven.) by NIOSH [Titanium dioxide]. Classified 2B (Possible for humans.) by IARC, 3 (Possible for humans.) by European Union [Titanium dioxide]. Classified A4 (Not classifiable for humans or animals.) by ACGIH [Titanium dioxide]. Classified A4 (Not classifiable for humans or animals.) by ACGIH [Manganese].
 Contains material which may cause damage to the following organs: blood, kidneys, lungs, the nervous system, heart, gastrointestinal tract, upper respiratory tract, skin, bones, central nervous system (CNS), eye, lens or cornea, muscle tissue, teeth.

Very hazardous by the following route of exposure: of eye contact (irritant).

Hazardous by the following route of exposure: of skin contact (corrosive, irritant), of inhalation (lung irritant).

Section 12. Ecological Information

Ecotoxicity data

| Product/ingredient name | Result | Species | Exposure |
|-------------------------|--|---|----------|
| Iron | Acute EC50 3700 µg/l Fresh water | Aquatic plants - Lemna minor | 4 days |
| | Acute LC50 33000 to 100000 µg/l Marine water | Crustaceans - Crangon crangon | 48 hours |
| Aluminium | Acute LC50 6.48 µg/l Marine water | Fish - Periophthalmus waltoni - Adult | 96 hours |
| | Chronic NOEC 100 mg/l Marine water | Algae - Glenodinium halli | 72 hours |
| | Acute LC50 38000 µg/l | Daphnia - Daphnia magna | 48 hours |
| | Acute LC50 120 µg/l Fresh water | Fish - Oncorhynchus mykiss - Embryo | 96 hours |
| Titanium dioxide | Chronic NOEC 9 mg/l Fresh water | Aquatic plants - Ceratophyllum demersum | 3 days |
| | Acute EC50 5.83 mg/l Fresh water | Algae - Pseudokirchneriella subcapitata - Exponential growth phase | 72 hours |
| | Acute LC50 3 mg/l Fresh water | Crustaceans - Ceriodaphnia dubia - Neonate | 48 hours |
| | Acute LC50 5.5 ppm Fresh water | Daphnia - Daphnia magna - Juvenile (Fledgling, Hatchling, Weanling) | 48 hours |
| | Acute LC50 1000 mg/l Fresh water | Fish - Pimephales promelas | 96 hours |
| Manganese | Acute LC50 >100000 µg/l Marine water | Fish - Fundulus heteroclitus | 96 hours |
| | Chronic NOEC 0.984 mg/l Fresh water | Algae - Pseudokirchneriella subcapitata - Exponential growth phase | 72 hours |
| | Acute EC50 31000 µg/l Fresh water | Aquatic plants - Lemna minor | 4 days |
| | Acute LC50 29000 µg/l | Daphnia - Daphnia magna | 48 hours |
| | Acute LC50 28 mg/l Fresh water | Fish - Pimephales promelas | 96 hours |

Products of degradation : Not applicable.

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.
Irritating material
Carcinogen
Target organ effects

U.S. Federal regulations : **TSCA 8(a) CDR Exempt/Partial exemption:** Not determined
United States inventory (TSCA 8b): All components are listed or exempted.
SARA 302/304: No products were found.
SARA 311/312 Hazards identification: Immediate (acute) health hazard, Delayed (chronic) health hazard

SARA 313

| | Product name | CAS number | % |
|--|-----------------|------------|---------|
| Form R - Reporting requirements | Barium fluoride | 7787-32-8 | 1 - 5 |
| | Aluminium | 7429-90-5 | 1 - 5 |
| | Manganese | 7439-96-5 | 0.5 - 2 |
| Supplier notification | Barium fluoride | 7787-32-8 | 1 - 5 |
| | Aluminium | 7429-90-5 | 1 - 5 |
| | Manganese | 7439-96-5 | 0.5 - 2 |

SARA 313 notifications must not be detached from the MSDS and any copying and redistribution of the MSDS shall include copying and redistribution of the notice attached to copies of the MSDS subsequently redistributed.

State regulations : **Massachusetts** : The following components are listed: ALUMINUM; MAGNESIUM; TITANIUM DIOXIDE; MANGANESE; SILICON DUST
New York : None of the components are listed.
New Jersey : The following components are listed: FLUORIDES; BARIUM COMPOUNDS; ALUMINUM; MAGNESIUM; TITANIUM DIOXIDE; TITANIUM OXIDE (TiO₂); MANGANESE; SILICON
Pennsylvania : The following components are listed: BARIUM COMPOUNDS; ALUMINUM; MAGNESIUM; TITANIUM OXIDE (TiO₂); MANGANESE; SILICON

WARNING: This product contains a chemical known to the State of California to cause cancer.

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: The following components are listed: Inorganic fluorides; Inorganic fluorides
Canadian ARET: None of the components are listed.
Canadian NPRI: The following components are listed: Calcium fluoride; Aluminum (fume or dust only); Manganese (and its compounds)
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.**
ACGIH-A1-Confirmed Human Carcinogen.
ACGIH-A2-Suspected Human Carcinogen.
ACGIH-A3-Animal Carcinogen.
ACGIH-A4-Not Classifiable as a Human Carcinogen.
ACGIH-A5-Not suspected as a Human Carcinogen.
IARC: International Agency for Research on Cancer.
IARC 1: Proven.
IARC 2A: Probable for human.
IARC 2B: Possible for human.
IARC 3: Not classifiable for human.
NIOSH: National Institute of Occupational Safety and Health.
NIOSH +: Proven.
NIOSH: None.
EU: European Union
Carc. 1A : May cause cancer (Known)
Carc. 1B : May cause cancer (Presumed)
Carc. 2 : Suspected of causing cancer
NTP: National Toxicology program.
NTP 1: Known to be human carcinogens.
NTP 2: Reasonably Anticipated to be human carcinogens.

Responsible name : IHS
Date of previous issue : 01/15/2011
Version : 5

Notice to reader

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