

MATERIAL SAFETY DATA SHEET

SECTION I -- IDENTIFICATION

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| SUPPLIER NAME: VANGUARD STEEL LTD. | PRODUCT TYPE: MIG WIRE FOR STAINLESS STEEL |
| ADDRESS: 2160 MEADOWPINE BLVD., MISSISSAUGA ONTARIO CANADA | TRADE NAME: BONARC ER316LSi |
| TELEPHONE NUMBER: 905-821-1100 | SIZE: ALL SIZES |
| DATE PREPARED: MARCH 1, 2015 | CLASSIFICATION AWS ER316LSi |

SECTION II -- HAZARDOUS MATERIALS

| COVERING AND FLUX INGREDIENTS | WT. % | TLV mg/m ³ | SUPPLEMENTAL INFORMATION |
|-------------------------------|--------|-----------------------|-------------------------------------------------------------------|
| STAINLESS STEEL WIRE | 100.00 | -- | (*) NOT LISTED NUISANCE VALUE MAXIMUM 10 mg/m ³ |
| NOMINAL WIRE COMPOSITION | | | |
| CARBON | 0.01 | -- | |
| SILICON | 0.70 | 10 (*) | |
| MANGANESE | 1.60 | 1.00 | |
| CHROMIUM | 19.14 | 0.50 | |
| NICKEL | 12.20 | 1.00 | |
| PHOSPORUS | 0.020 | -- | |
| SULFUR | 0.002 | -- | |
| MOLYBDENUM | 2.32 | 10.0 | |
| IRON | BAL | 10 (*) | |
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| OTHERS | WT. % | TLV mg/m ³ | |
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SECTION III -- FIRE AND EXPLOSION HAZARD DATA

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| NON-FLAMMABLE: WELDING ARC AND SPARKS CAN IGNITE COMBUSTIBLES AND FLAMMABLE PRODUCTS SEE Z49.1 REFERENCED IN SECTION VI |
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SECTION IV -- HEALTH HAZARD DATA

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| THRESHOLD LIMIT VALUE: | MAXIMUM FUME EXPOSURE | 5.0 mg/m ³ |
| EFFECT OF OVEREXPOSURE: | WELDING FUME MAY RESULT IN DISCOMFORT SUCH AS DIZZINESS, NAUSEA OR IRRITATION OF NOSE, THROAT OR EYES ARC RAYS CAN INJURE EYES AND BURN SKIN, ELECTRIC SHOCK CAN KILL | |
| EMERGENCY AND FIRST AID PROCEDURES: | CALL FOR MEDICAL AID. IF BREATHING IS DIFFICULT GIVE OXYGEN. IN ALL CASES CALL A PHYSICIAN | |

SECTION V -- REACTIVITY DATA

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| STABILITY | UNSTABLE | | CONDITIONS TO AVOID |
| | STABLE | • | NOT NECESSARY |
| INCOMPATIBILITY (MATERIALS TO AVOID): NOT NECESSARY | | | |
| HAZARDOUS DECOMPOSITION PRODUCTS: WELDING FUMES AND GASES CANNOT BE CLASSIFIED SIMPLY THE COMPOSITION AND QUANTITY OF BOTH ARE DEPENDANT ON THE METAL BEING WELDING, THE PROCESS, ELECTRODES USED AND PROCEDURE | | | |
| HAZARDOUS POLYMERIZATION | MAY OCCUR | | CONDITIONS TO AVOID |
| | WILL NOT OCCUR | • | NOT NECESSARY |

SECTION VI -- SPILL OR LEAK PROCEDURES

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| STEPS TO BE TAKEN IN CASE MATERIALS ARE RELEASED OR SPILLED: | NOT NECESSARY |
| WASTE DISPOSAL METHOD: | USE SCRAP DISPOSAL IN AN ENVIRONMENTALLY ACCEPTALBE MANNER ACCORDING TO LOCAL REGULATIONS UNLESS OTHERWISE NOTED. |

SECTION VII -- SPECIAL PROTECTION INFORMATION

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| RESPIRATORY PROTECTION: USE RESPIRABLE FUME RESPIRATOR WHEN WELDING IN CONFINED SPACE | |
| USE ENOUGH VENTILATION: EXHAUST AT THE ARC, OR BOTH, TO KEEP FUMES AND GASES AWAY FROM YOUR BREATHING ZONE AND THE GENERAL AREA. | |
| PROTECTIVE GLOVES: YES, WHEN WELDING | EYE PROTECTION: SHIELD NECESSARY WHEN WELDING |
| OTHER PROTECTIVE EQUIPMENT: MAY INCLUDE ARM PROTECTORS, APRONS, SHOULDER PROTECTION, HATS, AND DARK SUBSTANTIAL CLOTHING. DO NOT ALLOW LIVE ELECTRODES TO CONTACT SKIN. | |

SECTION VIII -- SPECIAL PRECAUTIONS

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| PRECAUTIONS TO BE TAKEN IN HAULING AND STORING: | KEEP DRY |
| OTHER PRECAUTIONS: READ AND UNDERSTAND THE MANUFACTURER'S INTSRUCTION AND THE PRECAUTIONARY LABEL ON THE PRODUCT | |