

**MATERIAL SAFETY DATA SHEET**

| <b>SECTION I -- IDENTIFICATION</b>                                   |  |
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| <b>SUPPLIER NAME:</b><br>VANGUARD STEEL LTD.                         | <b>PRODUCT TYPE:</b> FLUX CORED WIRE<br>FOR CARBON STEEL |
| <b>ADDRESS:</b><br>2160 MEADOWPINE BLVD., MISSISSAUGA ONTARIO CANADA | <b>TRADE NAME:</b><br>BONARC E71T-GS                     |
| <b>TELEPHONE NUMBER:</b><br>905-821-1100                             | <b>SIZE:</b><br>ALL SIZES                                |
| <b>DATE PREPARED:</b><br>MARCH 6, 2009                               | <b>CLASSIFICATION</b><br>AWS E71T-GS                     |

| <b>SECTION II -- HAZARDOUS MATERIALS</b> |              |                  |  |
|--|--------------|------------------|--|
| COVERING AND FLUX INGREDIENTS            | WT. %        | TLV mg/m3        | SUPPLEMENTAL INFORMATION                               |
| SILICONE OXIDE                           | 0.60         | 10               | ( * ) NOT LISTED<br>NUISANCE VALUE<br>MAXIMUM 10 mg/m3 |
| ALUMINUM OXIDE                           | 4.10         | 10 ( * )         |  |
| BARIUM OXIDE                             | 1.00         |                  |  |
| CARBON OXIDE                             | 0.50         |                  |  |
| CALCIUM OXIDE                            | 1.5          |                  |  |
| FLUORINE OXIDE                           | 1.30         |                  |  |
| IRON OXIDE                               | 1.90         | 10               |  |
| MAGNESIUM OXIDE                          | 1.50         | 10               |  |
| MANGANSE                                 | 0.40         | 5                |  |
|  |              |                  |  |
| <b>OTHERS</b>                            | <b>WT. %</b> | <b>TLV mg/m3</b> |  |
| LOW CARBON STEEL STRIP                   | 87.20        | 10 ( * )         |  |
|  |              |                  |  |
|  |              |                  |  |

| <b>SECTION III -- FIRE AND EXPLOSION HAZARD DATA</b>   |
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| <b>NON-FLAMMABLE:</b><br>WELDING ARC AND SPARKS CAN IGNITE COMBUSTABLES AND FLAMMABLE PRODUCTS<br>SEE Z49.1 REFERENCED IN SECTION VI |

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| <b>SECTION IV – HEALTH HAZARD DATA</b> |  |
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| THRESHOLD LIMIT VALUE:                 | MAXIMUM FUME EXPOSURE 5.0mg/m3   |
| EFFECT OF OVEREXPOSURE:                | WELDING FUME MAY RESULT IN DISCOMFORT SUCH AS DIZZINESS, NAUSEA OR IRRITATION OF NOSE, THROAT OR EYES.<br>ARC RAYS CAN INURE 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.  |

| <b>SECTION V – REACTIVITY DATA</b>  |                |   |                     |
|---|----------------|---|---------------------|
| 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       |

| <b>SECTION VI– SPILL OR LEAK PROCEDURES</b>                  |   |
|--|---|
| STEPS TO BE TAKEN IN CASE MATERIALS ARE RELEASED OR SPILLED: | NOT NECESSARY   |
| WASTE DISPOSAL METHOD:                                       | USE SCRAP DISPOSAL IN AN ENVIROMENTALLY ACCEPTABLE MANNER, ACCORDING TO LOCAL REGULATIONS UNLESS OTHERWISE NOTED. |

| <b>SECTION VII– SPECIAL PROTECTION INFORMATION</b>  |   |
|---|---|
| RESPIRATORY PROTECTION: USE RESPIRABLE FUME REPIRATOR WHEN WELDING IN CONFIDED 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. |   |

| <b>SECTION VIII– SPECIAL PRECAUTIONS</b>        |  |
|---|--|
| PRECAUTIONS TO BE TAKEN IN HAULING AND STORING: | KEEP DRY   |
| OTHER PRECAUTIONS:                              | READ AND UNDERSTAND THE MANUFACTURER'S INSTRUCTIONS AND THE PRECAUTIONARY LABEL ON TH PRODUCTS |