MATERIAL SAFETY DATA SHEET

SECTION I IDENTIFICATION			
SUPPLIER NAME:	PRODUCT TYPE: COVERED ELECTRODE		
VANGUARD STEEL LTD.	FOR CAST IRON		
ADDRESS:	TRADE NAME:		
2160 MEADOWPINE BLVD., MISSISSAUGA ONTARIO CANADA	BONARC CI55		
TELEPHONE NUMBER:	SIZE:		
905-821-1100	ALL SIZES		
DATE PREPARED:	CLASSIFICATION		
MARCH 1, 2015	AWS ENiFe-CI		

SECTION II HAZARDOUS MATERIALS			
COVERING AND FLUX INGREDIENTS	WT. %	TLV mg/m ³	SUPPLEMENTAL INFORMATION
LIMESTONE and/or CALCIUM CARBONATE	6.00	10	(*) NOT LISTED
SILICATE BINDER	2.00	10 (*)	NUISANCE VALUE
ALUMINUM OXIDE	0.50	10	MAXIMUM 10 mg/m ³
MANGANESE and MANGANESE ALLOYS	0.50	5	
CALCIUM FLUORIDE	3.00	2.5	
TOTAL CARBON	5.00		
TOTAL Fe	5.00	10 (*)	
OTHERS	WT. %	TLV mg/m ³	
Ni-Fe STEEL CORE WIRE	78.00		

SECTION III -- FIRE AND EXPLOSION HAZARD DATA

NON-FLAMMABLE:

WELDING ARC AND SPARKS CAN IGNITE COMBUSTABLES AND FLAMMABLE PRODUCTS SEE Z49.1 REFERENCED IN SECTION VI

MATERIAL SAFETY DATA SHEET

SECTION IV HEALTH HAZARD DATA		
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 PF	OCEDURES: CALL FOR MEDICAL AID. IF BREATHING IS DIFFICULT	
	GIVE OXYGEN. IN ALL CASES CALL A PHYSICIAN	

SECTION V REACTIVITY DATA					
STABILITY	UNSTABLE		CONDITIONS TO AVOID		
STABILITY	STABLE	•	NOT NECESSARY		
INCOMPATABILITY (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	٠	NOT NECESSARY		

SECTION VI SPILL OR LEAK PROCEDURES			
STEPS TO BE TAKEN IN CASE	ATERIALS ARE RELEASED OR SPILLED:	NOT NECESSARY	
WASTE DISPOSAL METHOD:	USE SCRAP DISPOSAL IN AN ENVIRONME	NTALLY ACCEPTALBE MANNER	
	ACCORDING TO LOCAL REGULATIONS UN	LESS OTHERWISE NOTED.	

SECTION VII -- SPECIAL PROTECTION INFORMATION

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

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