MATERIAL SAFETY DATA SHEET

SECTION I IDENTIFICATION					
SUPPLIER NAME:	PRODUCT TYPE: COVERED ELECTRODE				
VANGUARD STEEL LTD.	FOR STAINLESS STEEL				
ADDRESS:	TRADE NAME:				
2160 MEADOWPINE BLVD., MISSISSAUGA ONTARIO CANADA	BONARC E309L-16				
TELEPHONE NUMBER:	SIZE:				
905-821-1100	ALL SIZES				
DATE PREPARED:	CLASSIFICATION				
MARCH 6, 2012	AWS E309L-16				

SECTION II HAZARDOUS MATERIALS						
COVERING AND FLUX INGREDIENTS	WT. %	TLV mg/m ³	SUPPLEMENTAL INFORMATION			
TITANIUM OXIDE	13.50	10	(*) NOT LISTED			
LIMESTONE and/or CALCIUM CARBONATE	2.50	10	NUISANCE VALUE			
MANGANESE and MANGANESE ALLOYS	1.00	5	MAXIMUM 10 mg/m ³			
SILICON and SILICON ALLOYS	4.50	10 (*)				
CHROMIUM and CHROMIUM ALLOYS	6.00	0.5				
TOTAL-Fe	1.00	10 (*)				
NICKEL OXIDE	9.50					
SILICATE BINDER	1.50	10 (*)				
OTHERS	WT. %	TLV mg/m ³				
STAINLESS STEEL CORE WIRE	60.50					

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 DA	TA	
THRESHOLD LIMIT VALUE:	MAXIMUM FUME	EXPOSURE	5.0 mg/m ³		
EFFECT OF OVEREXPOSURE:	WELDING FUME	MAY RESULT	IN DISCOMFOR	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 PR	ROCEDURES:	CALL FC	R MEDICAL AID	. IF BREATHING IS DIF	FICULT
		GIVE OX	YGEN. IN ALL C	ASES CALL A PHYSIC	IAN

SECTION V REACTIVITY DATA					
STABILITY	UNSTABLE		CONDITIONS TO AVOID		
	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	•	NOT NECESSARY		

SECTION VI -- SPILL OR LEAK PROCEDURES

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

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