

SECTION I — MATERIAL IDENTIFICATION AND USE

Material name identifier STAINLESS STEEL			
Manufacturer's name ATLAS STAINLESS STEELS		Supplier's name ATLAS STAINLESS STEELS	
Street address 1640, MARIE-VICTORIN		Street address 1640, MARIE-VICTORIN	
City TRACY	Province QUEBEC	City TRACY	Province QUEBEC
Postal code J3R 5R5	Emergency telephone no. (450) 746-5000	Postal code J3R 5R5	Emergency telephone no. (450) 746-5000
Chemical name NOT APPLICABLE	Chemical family STEEL	Chemical formula NOT APPLICABLE	Molecular weight NOT APPLICABLE
Trade name and synonyms 300, 400, SERIES	Material use STAINLESS STEEL PRODUCTS	TDM classification NOT REGULATED	WHIMS classification CLASS D - DIV.2 - SUBDIV. A

SECTION II — HAZARDOUS INGREDIENTS OF MATERIAL

Hazardous ingredients	Approximate concentration %	C.A.S. N.A. or U.N. Numbers	«Exposure limits»		LD ₅₀ /LC ₅₀ Specify species and route
			(OSHA) P.E.L.	(ACGIH 1986-1996) TWA	
IRON	80.0	7439-89-6	10 FUMES	5 FUMES	NOT AVAILABLE
MANGANESE	2.5	7439-96-5	C5 DUSTS	0.2 DUSTS	LD50: 9 mg/kg (ORAL - RAT)
MOLYBDENUM	3.5	7439-98-7	15	10	NOT AVAILABLE
NICKEL	20.0	7440-02-0	1	1 METAL	NOT AVAILABLE
CHROMIUM	20.0	7440-47-3	1 METAL	0.5 METAL	NOT AVAILABLE
COBALT	0.5	7440-48-4	0.1	0.02 FUMES	NOT AVAILABLE
COPPER	0.5	7440-50-8		0.2 FUMES	NOT AVAILABLE
			1 DUSTS	1 DUSTS	

NOTE: CONCENTRATIONS REPRESENT A MAXIMUM FOR ALL GRADES WITHIN A CATEGORY OF STEEL PRODUCTS AND MUST NOT BE INTERPRETED AS A SPECIFICATION FOR A PARTICULAR GRADE.

SECTION III — PHYSICAL DATA FOR MATERIAL

Physical state Gas <input type="checkbox"/> Liquid <input type="checkbox"/> Solid <input checked="" type="checkbox"/>	Odour and appearance ODOURLESS/METALLIC, GREY, SILVER		Odour threshold N/AP	Specific gravity 0,287 lbs/cu.in.
Vapour pressure (mm) N/AP	Vapour density (air=1) N/AP	Evaporation rate N/AP	Boiling point (°C) N/AP	Melting pt 1530°C
Solubility in water (20°C) N/AP	% volatile (by volume) N/AP	PH N/AP	Explosive density N/AP	Coefficient of water/oil distribution N/AP

SECTION IV — FIRE AND EXPLOSION HAZARD OF MATERIAL

Flammability <i>If yes, under which conditions?</i> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>				
Means of extinction NOT APPLICABLE				
Special procedures NOT APPLICABLE				
Flashpoint (°C) and method N/AP		Upper flammable limit (% by volume) N/AP		Lower flammable limit (% by volume) N/AP
Auto-ignition temperature (°C) N/AP			Hazardous combustion products N/AP	
Explosion data Sensitivity to mechanical impact	N/AP	Rate of burning	N/AP	Explosive power N/AP
				Sensitivity to static discharge NO

SECTION V — REACTIVITY DATE

Chemical stability <i>If no, under which conditions?</i> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Incompatibility to other substances	<i>If so, which ones?</i> CONTACT WITH MINERAL ACIDS WILL RELEASE HYDROGEN GAS
Reactivity and under what conditions? NOT APPLICABLE	

Hazardous decomposition products
NOT APPLICABLE

STAINLESS STEEL

SECTION VI — TOXICOLOGICAL PROPERTIES OF PRODUCT

ROUTE OF ENTRY SKIN CONTACT SKIN ABSORPTION EYE CONTACT INHALATION INGESTION

STEEL PRODUCTS IN A NORMAL STATE POSE NO INHALATION, INGESTION OR CONTACT HAZARD. HOWEVER THESE MAY OCCUR WITH BURNING, WELDING, OR GRINDING. OPERATIONS PROLONGED CONTACT WITH COATING MATERIALS MAY CAUSE SKIN IRRITATION AND/OR DERMATITIS.

Effects of acute exposure to product

NONE FOR SHIPPED PRODUCT. WELDING OR BURNING OF MATERIAL WILL GENERATE METAL FUMES. INHALATION OVEREXPOSURE TO FUMES MAY CAUSE FLULIKE SYMPTOMS (EX.: CHILLS, FEVER) CALLED METAL FUME FEVER, EYE, NOSE OR THROAT IRRITATION.

Effects of chronic exposure to product

NONE TO SHIPPED PRODUCT. WELDING, BURNING, GRINDING GENERATES METAL FUMES OR OXIDE DUST. PROLONGED INHALATION OVEREXPOSURE TO DUST OR FUMES (IRON OXIDE) MAY RESULT IN THE ACCUMULATION OF IRON OXIDE DUST IN THE LUNGS. A CONDITION KNOWN AS SIDEROSIS WITH FEW OR NO SYMPTOMS. CERTAIN NICKEL AND CHROMIUM COMPOUNDS HAVE BEEN LISTED WITH I.A.R.C. AS NASAL AND LUNG CARCINOGENS, PROLONGED SKIN CONTACT MAY CAUSE REDDENING AND DRYING OF SKIN OR DERMATITIS FROM NICKEL/CHROMIUM CONTENT IN STEEL. PROLONGED OVEREXPOSURE TO COBALT DUST MAY RESULT IN AN ASTHMA LIKE CONDITION (COUGH, SHORTNESS OF BREATH).

LD50 of product (specify and route) 9 mg/kg (ORAL-RAT)	Irritancy of product NOT APPLICABLE	Exposure limits of product SEE SECTION II
LC50 of product (specify and route) NOT AVAILABLE	Sensitization to product NO KNOWN EFFECTS	Synergistic materials NO KNOWN EFFECTS
<input checked="" type="checkbox"/> CARCINOGENECITY SEE ABOVE	<input type="checkbox"/> REPRODUCTIVE EFFECTS NO KNOWN EFFECTS	<input type="checkbox"/> TERATOGENECITY NO KNOWN EFFECTS
		<input type="checkbox"/> MUTAGENECITY NO KNOWN EFFECTS

SECTION VII — PREVENTIVE MEASURES

Personal protective equipment	DEPENDS ON THE PROCESS BEING PERFORMED ON THE MATERIAL, EACH OPERATION MUST BE ASSESSED FOR SUITABLE PROTECTIVE EQUIPEMENT.		
Gloves (specify) LEATHER FACED OR EQUIVALENT	Respiratory (specify) SEE BELOW	Eye (specify) SAFETY GLASSES OR FACE SHIELD AS REQUIRED	Footwear (specify) SAFETY SHOES/BOOTS AS REQUIRED
Clothing (specify) NOT APPLICABLE	Other (specify) RESPIRATORY: NIOSH APPROVED AIR PURIFYING FOR DUST, MIST OR FUME WHERE REQUIRED		
Engineering controls (e.g.: ventilation, enclosed process, specify)	SEE REGULATION APPLICABLE		
Leak and spill procedure	NOT APPLICABLE		
Waste disposal	NOT APPLICABLE		
Handling procedures and equipment	NOT APPLICABLE		
Storage requirements	NOT APPLICABLE		
Special shipping information	NOT APPLICABLE		

SECTION VIII — FIRST AID MEASURES

Skin	WASH AFFECTED AREA WITH SOAP AND WATER, SEEK MEDICAL ATTENTION IF IRRITATION PERSISTS.
Eye	FOR IRRITATION FROM COATING MATERIALS, FLUSH EYES WITH PLENTY OF WATER WHILE HOLDING EYELIDS OPEN. SEEK MEDICAL ATTENTION IF IRRITATION PERSISTS.
Inhalation	FOR EXPOSURE TO METAL FUMES, REMOVE TO FRESH AIR, SEEK MEDICAL ATTENTION.
Ingestion	NOT APPLICABLE
General advise	SOME STEEL GRADES MAY HAVE A MINERAL OIL COATING, USE IMPERVIOUS GLOVES WHEN HANDLING TO PREVENT SKIN IRRITATION.

SECTION IX — PREPARATION, DATE OF M.S.D.S.

Additional information/comments		
Sources used	ACGIH: DOCUMENTATION OF THRESHOLD LIMIT VALUES (TLV) IARC: INTERNATIONAL AGENCY FOR RESEARCH ON CANCER OSHA: OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION	
Prepared by <i>Chantal S. [Signature]</i>	Phone number (450) 746-5274	Date 1 JUL 1998