

MATERIAL SAFETY DATA SHEET

IDENTIFICATION & USE	TYPE OF PRODUCT Cleaning Solution for Galvanic D.O. Probes		CHEMICAL FAMILY organic acid solution							
	PRODUCT NUMBER Orion 080313		FORMULA							
	MANUFACTURER'S NAME AND ADDRESS Thermo Fisher		PRODUCT USE Analyzer reagent							
	166 Cummings Center		EMERGENCY TELEPHONE NO. 800-424-9300							
	Beverly, MA 01915		Poison Info Centre: 1 800 268-9017							
	CONTAINER SIZE AND TYPE		USE AS RECEIVED	YES						
HAZARDOUS INGREDIENTS	SHIPPING NAME Acetic acid solution, more than 10 per cent but not more than 80 per cent acid, by mass		CLASS		8 (9.2)					
	PIN UN 2790	WHMIS Classification Class E — Corrosive Material		PACKING GROUP		II				
	CONCENTRATION*	HAZARDOUS	INGREDIENTS	CHEMICAL NAMES	LD ₅₀ mg/kg	LC ₅₀ **	CAS REGISTRY NO.			
	1 23		acetic acid		ORL-MUS		64-19-7			
					4960					
	1 77		water (non-hazardous component)				7732-18-5			
PHYSICAL DATA	FREEZING POINT		< 0 °C	MELTING POINT		NA °C	BOILING POINT		> 100 °C	
	VAPOUR PRESSURE		11 mm Hg	VAPOUR DENSITY (AIR = 1)		2.1	SPECIFIC GRAVITY (H ₂ O = 1)		1.05	
	COEFFICIENT OF WATER/OIL DISTRIBUTION		No Data	EVAPORATION RATE		.97	pH AT 25 °C		1.9	
	ODOUR THRESHOLD		No Data	PHYSICAL STATE		GAS	LIQUID	PASTE	SOLID	POWDER
	ODOUR AND APPEARANCE		Pungent, vinegar-like odour							
	FLASH POINT AND METHOD OF DETERMINATION		41°C, closed cup (100% acetic acid). No data for 23% solution.			FLAMMABLE LIMITS		L.E.L.	U.E.L.	
FIRE & EXPLOSION DATA	CONDITIONS OF FLAMMABILITY		none							
	MEANS OF EXTINCTION		water, alcohol foam, dry chemical, carbon dioxide							
	HAZARDOUS COMBUSTION PRODUCTS		hazardous gases such as carbon monoxide							
			AUTO IGNITION TEMP.		°C					
	EXPLOSION DATA		SENSITIVITY TO MECHANICAL IMPACT		NA					
			SENSITIVITY TO STATIC DISCHARGE		NA					
SPECIAL FIRE FIGHTING PROCEDURES										

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REACTIVITY	STABLE	YES	CONDITIONS TO AVOID heat		PRODUCT NUMBER Orion 080313	
	UNSTABLE					
	INCOMPATIBILITY — MATERIALS TO AVOID Strong oxidizers (chromic acid, sodium peroxide, nitric acid, etc). Strong caustics.					
	HAZARDOUS DECOMPOSITION PRODUCTS Toxic gases such as carbon monoxide may be released.					
CONDITIONS OF REACTIVITY						
HEALTH HAZARD DATA	HAZARDOUS ROUTES OF ENTRY	INHALATION	INGESTION	EYE CONTACT	SKIN CONTACT	SKIN ABSORPTION
			YES	YES		YES
	EFFECTS OF EXPOSURE (ACUTE) Inhalation: irritation of eyes, nose and throat, coughing.					
	Severe overexposure results in pulmonary edema. Skin and eyes: can cause burns, pain					
	EFFECTS OF EXPOSURE (CHRONIC) and brownish or yellowish stains. Ingestion: May cause burning and pain in the mouth,					
	throat, and abdomen					
	EXPOSURE LIMITS					
	SENSITIZATION TO PRODUCT					
	CARCINOGENICITY Not listed as a carcinogen by NTP					
	OTHER TOXICOLOGICAL EFFECTS No information available.					
EMERGENCY AND FIRST AID PROCEDURES						
Seek medical attention for all serious forms of exposure.						
Eyes and Skin: immediately flush with a stream of running water for a minimum of						
15 minutes, occasionally lifting eye lid. Wash skin with soap and water.						
Inhalation: Remove victim to fresh air. Give artificial respiration if necessary						
Ingestion: Get immediate medical attention Give large amount of water or milk. Do not						
induce vomiting.						
RESPIRATORY PROTECTION						
VENTILATION		LOCAL EXHAUST control to exposure limits	SPECIAL			
		MECHANICAL (GENERAL)	OTHER			
HAND PROTECTION impervious gloves			EYE PROTECTION chemical goggles			
PROCEDURES TO BE FOLLOWED IN CASE OF LEAK OR SPILL Apply inert sorbent. Collect product and neutralize. Collect neutralization sludge for disposal.						
WASTE DISPOSAL METHOD Neutralize and dispose of in accordance with local, provincial, and federal laws.						
HANDLING PROCEDURES AND EQUIPMENT Use only in a well-ventilated area. Safety shower and eye bath located close to working area.						
Do not breath fumes when adding diffusion tubes to bottle.						
STORAGE REQUIREMENTS Store in a cool, well-ventilated area. Keep from freezing. Keep away from heat.						
SPECIAL SHIPPING INFORMATION NFPA rating: Health - 2, Fire - 0, Reactivity - 1, Specific - Corrosive						
PREPARATION	PREPARED BY Peter Bakker		APPROVED BY Peter Bakker			
	TITLE Chemistry Manager		TITLE Chemistry Manager		TELEPHONE (519)941-8161	
			<i>Peter Bakker</i>		DATE November 5, 2009	
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