

MATERIAL SAFETY DATA SHEET

IDENTIFICATION & USE	TYPE OF PRODUCT Fluoride Reagent		CHEMICAL FAMILY organic acid solution							
	PRODUCT NUMBER Orion 170930		FORMULA							
	MANUFACTURER'S NAME AND ADDRESS Thermo Fisher		PRODUCT USE Analyzer reagent							
	166 Cummings Center		EMERGENCY TELEPHONE NO. 1-800-424-9300							
	Beverly, MA 01915									
	CONTAINER SIZE AND TYPE		USE AS RECEIVED	YES						
HAZARDOUS INGREDIENTS	SHIPPING NAME Acetic acid solution, between 10 and 80 per cent acid, by mass		CLASS		8 (9.2)					
	PIN 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 12		acetic acid		ORL-RAT	IHL	64-19-7			
					3310mg/kg	5620ppm/h				
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		1.8	
	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 12% solution.			FLAMMABLE LIMITS		L.E.L.	U.E.L.	
FIRE & EXPLOSION DATA	CONDITIONS OF FLAMMABILITY		none							
	MEANS OF EXTINCTION		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 170930
	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.				
HEALTH HAZARD DATA	CONDITIONS OF REACTIVITY				
	HAZARDOUS ROUTES OF ENTRY	INHALATION	INGESTION	EYE CONTACT	SKIN CONTACT
			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.					
PREVENTIVE MEASURES	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				
PREPARATION	PREPARED BY Peter Bakker		APPROVED BY Peter Bakker		
	TITLE Chemistry Manager		TITLE Chemistry Manager		TELEPHONE (519)941-8161
			DATE <i>Peter Bakker</i>		DATE November 5, 2009
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