

MATERIAL SAFETY DATA SHEET

IDENTIFICATION & USE	TYPE OF PRODUCT Standard Acid Solution 1770 Chlorine Monitor		CHEMICAL FAMILY organic acid solution			
	PRODUCT NUMBER Orion 177042		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 10	acetic acid		ORL-RAT	IHL	64-19-7
				3310mg/kg	5620ppm/h	
PHYSICAL DATA	FREEZING POINT	16.6 °C	MELTING POINT	NA °C	BOILING POINT	118 °C
	VAPOUR PRESSURE	11 mm Hg	VAPOUR DENSITY (AIR = 1)	2.1	SPECIFIC GRAVITY (H ₂ O = 1)	1.06
	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	X	
	ODOUR AND APPEARANCE Pungent, vinegar-like odour					
FIRE & EXPLOSION DATA	FLASH POINT AND METHOD OF DETERMINATION 41°C, closed cup (100% acetic acid). No data for 10% solution.		FLAMMABLE LIMITS	L.E.L.	U.E.L.	
	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 177042	
	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 and brownish or yellowish stains. Ingestion: May cause burning and pain in the mouth, throat, and abdomen.					
	EFFECTS OF EXPOSURE (CHRONIC)					
	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 eyelid. 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 to control 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 breathe 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		TITLE		TELEPHONE	
			<i>Peter Bakker</i>		(519) 941-8161	
					DATE November 5, 2009	
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