

MATERIAL SAFETY DATA SHEET

IDENTIFICATION & USE	TYPE OF PRODUCT Reagent for calcium monitor		CHEMICAL FAMILY organic acid solution								
	PRODUCT NUMBER A1182030		FORMULA CHOOH								
	MANUFACTURER'S NAME AND ADDRESS IC CONTROLS™		PRODUCT USE Analyzer reagent								
	29 Centennial Rd.		EMERGENCY TELEPHONE NO. IC CONTROLS: (519)941-8161								
	Orangeville, Ont. L9W 1R1		Poison Info Centre: 1 800 268-9017								
	CONTAINER SIZE AND TYPE polyethylene bottle		USE AS RECEIVED	YES							
HAZARDOUS INGREDIENTS	SHIPPING NAME Formic Acid		CLASS	8 (9.2)							
	PIN 1779	WHMIS Classification Class E — corrosive	PACKING GROUP	II							
	CONCENTRATION*	HAZARDOUS INGREDIENTS	CHEMICAL NAMES	LD ₅₀ mg/kg	LC ₅₀ **	CAS REGISTRY NO.					
	2 40-60	Formic Acid		ORL-RAT	IHL—	64-18-6					
				1.21g/kg	15 mg/m ³						
					15M						
PHYSICAL DATA	FREEZING POINT		5 °C	MELTING POINT		N. Appl. °C	BOILING POINT		102 °C		
	VAPOUR PRESSURE		24°C 40 mm	VAPOUR DENSITY (AIR = 1)		Not Avail.		SPECIFIC GRAVITY (H ₂ O = 1)		1.14	
	COEFFICIENT OF WATER/OIL DISTRIBUTION		Not Avail.		EVAPORATION RATE		2.0	pH AT 25 °C		1.8	
	ODOUR THRESHOLD		Not Avail.		PHYSICAL STATE		GAS	LIQUID	PASTE	SOLID	POWDER
	ODOUR AND APPEARANCE		colourless, pungent odour.								
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FIRE & EXPLOSION DATA	FLASH POINT AND METHOD OF DETERMINATION				FLAMMABLE LIMITS		L.E.L.	U.E.L.			
							57%	18%			
	CONDITIONS OF FLAMMABILITY				not available						
	MEANS OF EXTINCTION				CO ₂ , water, dry chemical, alcohol						
	HAZARDOUS COMBUSTION PRODUCTS				Moderate fire hazard when exposed to heat or open flames.						
					AUTO IGNITION TEMP.		> 500 °C				
EXPLOSION DATA		SENSITIVITY TO MECHANICAL IMPACT									
		none									
		SENSITIVITY TO STATIC DISCHARGE									
		none									
SPECIAL FIRE FIGHTING PROCEDURES				Wear self-contained breathing apparatus and protective clothing. IATA classification: corrosive							

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REACTIVITY	STABLE	YES	CONDITIONS TO AVOID heat			PRODUCT NUMBER A182030
	UNSTABLE					
	INCOMPATIBILITY—MATERIALS TO AVOID Strong caustics, strong oxidizers (chromic acid, NaPeroxide, etc.), sulphuric acid					
	HAZARDOUS DECOMPOSITION PRODUCTS Toxic gases such as carbon monoxide may be released in a fire.					
CONDITIONS OF REACTIVITY Polymerization will not occur.						
HEALTH HAZARD DATA	HAZARDOUS ROUTES OF ENTRY	INHALATION YES	INGESTION YES	EYE CONTACT YES	SKIN CONTACT YES	SKIN ABSORPTION YES
	EFFECTS OF EXPOSURE (ACUTE) Watering of eyes, nasal discharge and coughing. Ingestion may be fatal.					
	Skin: severe irritation and blistering.					
	EFFECTS OF EXPOSURE (CHRONIC) In severe case of poison: shock, later breathing difficulties.					
	EXPOSURE LIMITS					
	SENSITIZATION TO PRODUCT					
	CARCINOGENICITY Not found on ACGIH or IARC lists.					
	OTHER TOXICOLOGICAL EFFECTS Mutation data: mno -esc 70 ppm/eH for formic acid					
	EMERGENCY AND FIRST AID PROCEDURES Contact physician for all significant forms of contact.					
	Eyes and skin: flush eyes with large amounts of water and lift eyelids often. Flush skin with large amounts of water. Inhalation: remove to fresh air. Give artificial respiration if necessary.					
	Ingestion: seek medical attention immediately. Give large amounts of water if conscious.					
	Do not induce vomiting.					
	PREVENTIVE MEASURES	RESPIRATORY PROTECTION Use in well-ventilated area.				
VENTILATION		LOCAL EXHAUST control to TLV levels			SPECIAL	
		MECHANICAL (GENERAL) yes, if pouring			OTHER	
HAND PROTECTION protective gloves, impervious			EYE PROTECTION protective goggles			
PROCEDURES TO BE FOLLOWED IN CASE OF LEAK OR SPILL Wear protective clothing; ventilate area; absorb small quantities on paper towel.						
Remove sources of ignition.						
WASTE DISPOSAL METHOD Consult applicable laws for appropriate disposal practices. Evaporate small quantities picked up on paper towels under hood. Wash hands thoroughly after handling. Large quantities should be atomized in suitable combustion chamber.						
HANDLING PROCEDURES AND EQUIPMENT Keep away from oxidizers.						
STORAGE REQUIREMENTS Store away from heat.						
SPECIAL SHIPPING INFORMATION						
PREPARATION	PREPARED BY Peter Bakker		APPROVED BY Peter Bakker			
	TITLE		TITLE		TELEPHONE	
			Chemistry Manager		(519) 941-8161	
		<i>Peter Bakker</i>		DATE November 5, 2009		
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