

# MATERIAL SAFETY DATA SHEET

SECTION 1—PRODUCT IDENTIFICATION AND USE				
PRODUCT IDENTIFIER > <b>FERRIC CHLORIDE REAGENT</b>			CATALOGUE NUMBER: <b>RF40</b>	
MANUFACTURER'S NAME Dalynn Biologicals Inc.		SUPPLIER'S NAME Dalynn Biologicals Inc.		
STREET ADDRESS 3253 – 34 Avenue N.E.		STREET ADDRESS 3253 – 34 Avenue N.E.		
CITY Calgary	PROVINCE Alberta	CITY Calgary	PROVINCE Alberta	
POSTAL CODE T1Y 6X2	CHEMICAL EMERGENCY ONLY: <b>1-613-996-6666</b>	POSTAL CODE T1Y 6X2	CHEMICAL EMERGENCY ONLY: <b>1-613-996-6666</b>	
SECTION 2—HAZARDOUS INGREDIENTS				
HAZARDOUS INGREDIENTS	%	CAS NUMBER	LD <sub>50</sub> OF INGREDIENT (SPECIFY SPECIES AND ROUTE)	LC <sub>50</sub> OF INGREDIENT (SPECIFY INGREDIENT)
<b>Ferric Chloride</b>	<b>10.0</b>	<b>7705-08-0</b>	<b>Oral – Rat 450 mg/kg</b> <b>lvn – Mus 58 mg/kg</b>	<b>Not available</b>
<b>Hydrochloric acid</b>	<b>2.0</b>	<b>7647-01-0</b>	<b>Oral – Rbt 900 mg/kg</b>	<b>Inh – Rat 3,124 ppm / 4H</b>
<b>Water</b>	<b>88.0</b>	<b>7732-18-5</b>	<b>None</b>	<b>None</b>
SECTION 3—PHYSICAL DATA				
PHYSICAL STATE <b>Liquid</b>	ODOUR AND APPEARANCE <b>Yellow colored liquid</b>			ODOUR THRESHOLD (ppm) <b>Not available</b>
VAPOUR PRESSURE (mmHg) <b>Not available</b>	VAPOUR DENSITY (AIR=1) <b>Not available</b>	EVAPORATION RATE <b>Not available</b>	BOILING POINT (°C) <b>Not available</b>	FREEZING POINT (°C) <b>Not available</b>
pH <b>&lt;3.0</b>	SPECIFIC GRAVITY <b>Not available</b>	COEFF. WATER/OIL DIST. <b>Not available</b>		
SECTION 4—FIRE AND EXPLOSION DATA				
FLAMMABLE YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> IF YES, UNDER WHICH CONDITIONS? > <b>Non-flammable (product contains mostly water)</b>				
MEANS OF EXTINCTION <b>Carbon dioxide, dry chemical powder or appropriate foam</b>				
FLASHPOINT (°C) AND METHOD <b>Not available</b>		UPPER FLAMMABLE LIMIT (% BY VOLUME) <b>Not available</b>	LOWER FLAMMABLE LIMIT (% BY VOLUME) <b>Not available</b>	
AUTOIGNITION TEMPERATURE (°C) <b>Not available</b>		HAZARDOUS COMBUSTION PRODUCTS <b>Carbon monoxide, carbon dioxide, hydrogen chloride gas</b>		
EXPLOSION DATA >	SENSITIVITY TO IMPACT <b>No</b>		SENSITIVITY TO STATIC DISCHARGE <b>No</b>	
SECTION 5—REACTIVITY DATA				
CHEMICAL STABILITY YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> IF NO, UNDER WHICH CONDITIONS? >				
INCOMPATIBILITY WITH OTHER SUBSTANCES YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> IF SO, WHICH ONES? > <b>Strong oxidizing agents, sodium and potassium metals</b>				
REACTIVITY, AND UNDER WHAT CONDITIONS <b>Not available</b>				
HAZARDOUS DECOMPOSITION PRODUCTS <b>Hydrogen chloride gas</b>				

PRODUCT		<b>FERRIC CHLORIDE REAGENT</b>	
IDENTIFIER >			
<b>SECTION 6—TOXICOLOGICAL PROPERTIES</b>			
ROUTE OF ENTRY			
SKIN CONTACT	[X]	SKIN ABSORPTION	[X]
EYE CONTACT	[X]	INHALATION	[X]
INGESTION	[X]		
EFFECTS OF ACUTE EXPOSURE TO PRODUCT			
<p><b>Irritation to skin, eyes, mucous membranes, and respiratory tract upon exposure to liquid or mist.</b>  <b>All toxicological effects associated with this product are due to iron exposure; given the low amount of ferric chloride in this product the danger associated with exposure is minimal. Corrosive liquid; swallowing can cause severe burns of the mouth, throat, and stomach. Can cause sore throat, vomiting, and diarrhea. Low toxicity in small quantities but larger doses (30 mg/kg) may cause nausea, vomiting and diarrhea. Pink urine discoloration is a strong indicator of iron poisoning. Liver damage, coma and death may follow, sometimes delayed as long as three days.</b></p>			
EFFECTS OF CHRONIC EXPOSURE TO PRODUCT			
<p><b>The chronic toxicological effects of exposure to this product have not been thoroughly investigated.</b></p>			
EXPOSURE LIMITS	IRRITANCY OF PRODUCT	SENSITISATION TO PRODUCT	CARCINOGENICITY
Not available	Yes	Not available	Not available
TERATOGENICITY	REPRODUCTIVE TOXICITY	MUTAGENICITY	SYNERGISTIC PRODUCTS
Not available	Not available	Not available	Not available
<b>SECTION 7—PREVENTIVE MEASURES</b>			
PERSONAL PROTECTIVE EQUIPMENT:			
<p><b>Wear appropriate protective clothing: butyl rubber gloves, safety goggles, apron or appropriate clothing.</b></p>			
ENGINEERING CONTROLS (SPECIFY, EG, VENTILATION, ENCLOSED PROCESS)			
<p><b>Use in area with adequate ventilation.</b></p>			
LEAK AND SPILL PROCEDURE			
<p><b>Take up with an absorbent and containerize appropriately. Ventilate area and wash spill site after material pickup is complete.</b></p>			
WASTE DISPOSAL			
<p><b>According to local, provincial and federal regulations</b></p>			
HANDLING PROCEDURES AND EQUIPMENT			
<p><b>Avoid direct contact. Wash thoroughly after handling.</b></p>			
STORAGE REQUIREMENTS			
<p><b>Keep at refrigerated temperature.</b></p>			
SPECIAL SHIPPING INFORMATION			
<p><b>None.</b></p>			
<b>SECTION 8—FIRST AID MEASURES</b>			
<p><b>In case of contact with eyes, rinse with copious amounts of water for at least 15 minutes.</b>  <b>In case of contact with skin, wash with copious amounts of water.</b>  <b>If swallowed, wash mouth out with water provided person is conscious.</b>  <b>If inhaled remove patient to fresh air and administer approved oxygen supply if breathing is difficult.</b>  <b>Seek medical attention.</b></p>			
<b>SECTION 9—PREPARATION OF MSDS</b>			
PREPARED BY (GROUP, DEPT, ETC.)	PHONE NUMBER	DATE	
Technical Department Dalynn Biologicals Inc.	(403) 291-0067	2014 October	