SAFETY DATA SHEET

1 – PRODUCT AND COMPANY IDENTIFICATION

Product Name: **FORMALDEHYDE 37%**

Product code: F-5000

Product use: For laboratory or industrial use only

Supplier: Cochimbec Inc.
8561 chemin Dalton
T.M.R., Québec
H4T 1V5 CANADA

Telephone: 514-990-1935
Emergency Telephone: (CANUTEC): 613-996-6666

2 – HAZARDS IDENTIFICATION

GHS Classification: Flammable liquids (Category 4)
Acute toxicity, oral (Category 3)
Acute toxicity, inhalation (Category 3)
Acute toxicity, dermal (Category 3)
Skin corrosion / skin irritation (Sub-category 1B)
Skin sensitization (Category 1)
Germ cell mutagenicity (Category 2)
Carcinogenicity (Category 1B)
Specific target organ toxicity – single exposure (Category 1)
Acute aquatic toxicity (Category 3)

Signal word:		**Danger**
Hazard statement:	H227	Combustible liquid.
	H301 + H311 + H331	Toxic if swallowed, in contact with skin or by inhalation.
	H314	Causes severe skin burns and eye damage.
	H317	May cause an allergic skin reaction.
	H341	Suspected of causing genetic defects
	H350	May cause cancer
	H370	Causes damage to organs

	H402	Harmful to aquatic life.
Precautionary statement:	P201	Obtain special instructions before use.
	P202	Do not handle until all safety precautions have been read and understood.
	P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
	P260	Do not breath dust / fume / gas / mist / vapours / spray.
	P264	Wash skin thoroughly after handling.
	P270	Do not eat, drink or smoke when using this product.
	P271	Use only outdoors or in a well-ventilated area.
	P272	Contaminated work clothing should not be allowed out of the workplace.
	P273	Avoid release to the environment.
	P280	Wear protective gloves/protective clothing/eye protection/face protection.
	P301 + P310 + P330 + P331	IF SWALLOWED: Immediately call a POISON CENTER or doctor. Rinse mouth. Do NOT induce vomiting.
	P303 + P361 + P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
	P304 + P340 + P310	IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or doctor.
	P305 + P351 + P338 + P310	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor.
	P308 + P311	IF exposed or concerned: Call a POISON CENTER / Doctor.
	P333 + P313	If skin irritation or rash occurs: Get medical advise/attention.
	P361 + P364	Take off immediately all contaminated clothing and wash them before reuse.
	P370 + P378	In case of fire: Use chemical powder or anti-alcohol foam to extinguish.
	P403 + P233	Store in a well ventilated place. Keep container tightly closed.
	P405	Store locked up.
	P501	Dispose of contents / container to an approved waste disposal installation.
Other hazards:	Inhalation:	Harmful if inhaled. Extremely irritating to mucous membranes and upper respiratory tract. Causes irritation to the respiratory tract.
	Eyes:	Causes eye burns and irritation.
	Skin:	Harmful if absorbed through the skin. Causes burns to the skin. Cause irritation to the skin.
	Ingestion:	Harmful if swallowed.

3 – COMPOSION / INFORMATION ON INGREDIENTS

Synonyms: **Formol, Formalin.**

INGREDIENT	Concentration	CAS No.	EC No.	Index No.
Formaldehyde	36-38 %	50-00-0	200-001-8	605-001-00-5
Methanol	10 – 15 %	67-56-1	200-659-6	603-001-00-X
Water	~ 50 %	7732-18-5	231-791-2	

4 – FIRST AID MEASURES

Inhalation:	Move victim to fresh air. If victim is not breathing, give artificial respiration and call for medical assistance.
Skin contact:	Remove contaminated clothing. Wash with soap and water. Consult a physician if irritation persists.
Eye contact:	Rinse thoroughly with water for 15 minutes. If irritation persists, continue rinsing and consult physician.
Ingestion:	DO NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.
Most important symptoms / effects	Breathing difficulties. May cause central nervous system depression. Symptoms of overexposure or inhalation of high vapour concentration may cause headache, dizziness, tiredness, loss of co-ordination or strange behaviour, nausea, loss of consciousness, nasal dripping, hoarseness, coughing, chess pain, breathing difficulty.

5 – FIRE-FIGHTING MEASURES

Extinguishing media:	Water spray, alcohol resistant foam, dry chemical, carbon dioxide. Use water spray to cool unopened containers.
Combustion Exposure Hazards:	Hazardous decomposition products formed under fire conditions: Carbon Monoxide, Carbon Dioxide.
Fire-Fighting equipment and precaution:	Wear self-contained breathing apparatus for firefighting if necessary. Wear appropriate protective clothing to fight fire.
Sensitivity to mechanical impact:	Not sensitive.
Sensitivity to static discharge:	N/D

NFPA **Risk** **0=Low** **4=High**	HEALTH	FLAMMABILITY	REACTIVITY	HAZARDS
	3	2	0	

6 – ACCIDENTAL RELEASE MEASURES

Personal Precautions:	Use personal protective equipment. Avoid inhaling vapour or mist. Use adequate ventilation. Keep away for sources of ignition. Evacuate people to safe areas. Avoid accumulation of vapours that can form explosive concentrations.
Environmental Precautions:	Safely prevent further leakage or spillage using personal protection. Avoid product entering into drains.

Method & Material for containment and cleaning up:	Contain and collect spillage with anti-spark vacuum cleaner or a wet-brush and placed in a container for disposal according to local, state and federal regulations.

7 – HANDLING AND STORAGE

Precautions for safe handling:	Wear personal protective equipment. Do not get on skin or eyes. Do not breath vapours or mist. Keep away from open flame, hot surfaces and sources of ignition. Use explosion proof equipment. Take precautionary measures against static discharges. Do not smoke. Ground any metal equipment.
Conditions for Safe Storage:	Store in a cool, dry place away from incompatibles, heat and possible source of ignition. Keep container tightly closed in a well-ventilated area.

8 – EXPOSURE CONTROLS AND PERSONAL PROTECTION

COMPONENTS WITH WORKPLACE CONTROL PARAMETERS

COMPONENT	CAS-No	VALUE	CONTROL PARAMETERS	BASIS
Formaldehyde	50-00-0	TWA	3 ppm	OSHA OEL
		STEL	10 ppm	OSHA OEL
		ceiling	5 ppm	OSHA OEL
		ceiling	0.3 ppm	OSHA OEL
		DIVS	20 ppm	
		(c)	1.00 ppm 1.30 mg/m^3	Canada, Alberta, CSST (Table 2:VLE)
		TWA	0.750 ppm 0.90 mg/m^3	Canada, Alberta, CSST (Table 2:VLE)
		TWE	0.30 ppm	Canada, LEP British Columbia
		P	2.0 ppm 3.0 mg/m^3	Quebec, RSST, Annex 1 Part 1: VEACA
Methanol	67-56-1	TWA	200 ppm 262 mg/m^3	Canada, Alberta, CSST (Table 2:VLE)
		TWA	200 ppm	Canada, LEP British Columbia
		STEL	250 ppm 328 mg/m^3	Canada, Alberta, CSST (Table 2:VLE)
		STEL	250 ppm	Canada, LEP British Columbia
		VEMP	200 ppm 262 mg/m^3	Quebec, RSST, Annex 1 Part 1: VEACA
		VECD	250 ppm 328 mg/m^3	Quebec, RSST, Annex 1 Part 1: VEACA

Eye Protection:	Safety glasses or chemical safety goggles or a face mask.
Hand Protection:	Use appropriate gloves.
Body Protection:	Use impervious apron suit. The protective clothing must be flame retardant and antistatic.
Respiratory Protection:	Where risk assessment shows air-purifying respirators are appropriate, use a full-face respirator with multi-purpose combination (US) or type AXBEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face air respirator. Use NIOSH (US) or CEN (EU) approved respirators.

Engineering Controls:	Use antispark equipment for exhaust or fume hood. Ensure adequate ventilation.

9 – PHYSICAL AND CHEMICAL PROPERTIES

Physical state:	Liquid.	**Auto ignition temperature:**	N / D
Color:	Colourless	**Upper Explosion Limit:**	70 % by Volume
Odour:	Strongly pungent	**Lower Explosion Limit:**	7 % by Volume
Odour threshold::	N / D	**Vapour pressure:**	40 mm Hg @ 39 °C
pH:	2.7 – 2.9, 1% @ 25°C	**Vapour density: (air = 1)**	1.4 (Formaldehyde)
Melting point:	N / D	**Relative density**	1.08
Boiling point:	~ 100 °C	**Water solubility:**	Completely soluble
Boiling range:	N / D	**Decomposition temperature:**	N / D
Density	1.079 g/mL @ 25°C	**Refractive Index:**	N / D
Flash point:	64 °C Closed cup	**Viscosity:**	N / D
Evaporation rate: (n-Butyl Acetate = 1)	~1	**Partition coeficient: n-octanol / water**	Log Pow 0.35

10 – STABILITY AND REACTIVITY

Chemical stability:	Stable under recommended storage conditions.
Possibility of hazardous reactions:	Vapours may form explosive mixture with air.
Conditions to avoid:	Heat, flames and sparks. Extreme temperatures.
Incompatible materials:	Strong oxidizers. Alkalis, phenol, Isocyanates, Acid Anhydrides, Strong acids, Strong bases, amines, Peroxides, Acid chlorides, Alkaline metals, Reducing agents, Chromium Trioxide.
Hazardous decomposition products:	Hazardous decomposition products formed under fire conditions: Carbon Oxides.

11 – TOXICOLOGICAL INFORMATION

COMPONENTS	**LD_{50} ORAL**	**LD_{50} DERMAL**	**LC_{50} INHALATION**
Formaldehyde	500 mg/kg (rat)	12.800 mg/kg (rabbit)	0.578 mg/L 4 h (rat)
Skin Corrosion / irritation	No data available.		
Serious eye damage / eye irritation	No data available.		
Respiratory or skin sensitisation	No data available.		
Germ cell Mutagenicity	No data available.		
Carcinogenicity	The NTP lists formaldehyde as a cancer causing agent on nasal openings to laboratory animals exposed to the product by inhalation. IARC – Group 1: Carcinogenic to humans.		

Reproductive toxicity	It is known to have caused congenital deformities to rats exposed to 20,000 ppm. Experiments on animals have shown that methanol is foetotoxic, teratogen and causes an important behaviour anomaly to descendants in doses that did not have maternal toxic effects. The behaviour anomalies were observed to descendants of rats have ingested water containing 2% methanol. Methanol caused mutagenic effects (Somatic cells) in laboratory animals.
Teratogenicity	No data available
Aspiration hazard	No data available
Symptoms of Exposure	Can cause central nervous system depression. Symptoms of overexposure or inhalation of a large quantity of vapours can cause headache, dizziness, drowsiness, lack of co-ordination or strange behaviour, nausea, loss of consciousness, nasal dripping, coughing, chest pain, breathing difficulty.
Synergistic effects	No data available
Addition information	RTECS: No data available

12 – ECOLOGICAL INFORMATION

COMPONENTS	**Toxicity to fish**	**Toxicity to daphnia and other aquatic invertebrates**	**Toxicity to Algea**
Formaldehyde	LC_{50} – Oncorhynchus mykiss – 0.032 – 0.226 mL/L – 96 h Flow through 100 – 136 mL/L – 96 h Static	No data available	No data available
Persistence and degradability	No data available		
Bioaccumulative potential	No data available		
Mobility in soil	No data available		
PBT and vPvB assessment	No data available		
Other adverse effects	Toxic to aquatic life.		

13 – DISPOSAL CONSIDERATIONS

Product	Burn in a chemical incinerator equipped with an afterburner and scrubber. Exert extra care in igniting, as this product is flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.
Contaminated clothing	Wash before reusing clothes.
Contaminated packaging	Dispose as unused product above.

14 – TRANSPORT INFORMATION

	TDG	IMDG	IATA
Shipping Name:	FORMALDEHYDE SOLUTION, FLAMMABLE	FORMALDEHYDE SOLUTION, FLAMMABLE	FORMALDEHYDE SOLUTION, FLAMMABLE
UN-number:	UN1198	UN1198	UN1198
Class & Subclass:	3 (8)	3 (8)	3 (8)
Packing Group:	III	III	III
Limited Quantity:	5 L	5 L	5 L
ERAP Index:	N / A	N / A	N / A
ERG #:	132		
Inhalation Toxicity:	No	No	No
Marine Pollutant:	No	No	No

15 – REGULATORY INFORMATION

US Regulations	All ingredients of product are listed in the TSCA inventory or are exempt.
Canada Classification	Canada WHMIS: Class B-3: Combustible liquids. Class D-1B: Materials causing immediate and serious toxic effects. Class D-2A: Very toxic material causing other toxic effects. Class D-2B: Toxic material causing other toxic effects. Class E: Corrosive material.

16 – OTHER INFORMATION

Information on the preparation of SDS:	Prepared by Cochimbec Inc. Safety Personnel Aug. 28, 2015 Revision 4 I.C. 1,2,3,7,8
Abbreviations:	ACGIH = American Conference of Governmental Industrial Hygienists ASTM = American Society for Testing and Materials BCF = Bioconcentration Factor CAS = Chemical Abstract Services CCOHS = Canadian Center for Occupational Health & Safety CEN (EU) = Committée Européen de Normalisation CERCLA = Comprehensive Environmental Response Compensation & Liability Act CFR = Code of Federal Regulations CMR = Carcinogenic-mutagenic-toxic for reproduction

	CPR = Controlled Products Regulations DIN = German Institute for Standardisation DOT = Department of Transport EC_{50} = Half maximal effect concentration EINECS = European Inventory of Existing Commercial Chemical Substances GHS = Global Harmonization System GLP = Good Laboratory practice GMO = Genetic Modified Organism IARC = International Agency for research on Cancer IATA = International Air Transport Association ISO = International Organisation for Standardisation IDLH = Immediate danger to life and health IMDG = International Maritime Dangerous Goods LC_{50} = Lethal concentration causing 50% death LD_{50} = Lethal dose causing 50% death LOAEL = Lowest Observed Adverse Effect Level LOEL = Lowest Observed Effect Level N/A = Not Applicable N/D = No Data N/E = Not Established NFPA = National Fire Protection Association NIOSH = National Institute for Occupational Safety & Health NTP = National Toxicology Program OECD = Organisation for Economic Co-operation & Development OEL = Occupational exposure limit OHSC = Occupational health & safety council (committee) OSHA = Occupational Safety & Health Administration PBT = Persistent, Bioaccumulation, Toxic PEL = Permissible Exposure Limit RCRA = Resource Conservation & Recovery Act RTECS = Registry of Toxic Effects of Chemical Substances SARA = Species at Risk Act STEL = Short term exposure limit STEV = Short term exposure value STOT = Specific Target Organ Toxicity TDG = Transport of Dangerous Goods TLV = Threshold limit value TMD = Transport de Matières Dangereuses TSCA = Toxic Substance Control Act TWA = Time weighted Average TWAEV = Time weighted average exposure value UN = United Nations VOC = Volatile Organic Compounds WEEL = Workplace Environment Exposure Limit WHO = World Health Organisation WHMIS = Workplace Hazardous Material Information System W / V = Weight / Volume W / W = Weight / Weight

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End of Safety Data Sheet