

# *Chem-Impex International Inc.*

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## SAFETY DATA SHEET

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### SECTION 1. CHEMICAL IDENTIFICATION

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CATALOG #:	32011
NAME:	Furfural
SYNONYMS:	2-Furaldehyde Furan-2-carboxaldehyde
24 HOUR EMERGENCY TELEPHONE:	(800) 535-5053(USA) 352-323-3500 (INTERNATIONAL)
TO REQUEST AN MSDS:	(800) 869-9290
CUSTOMER SERVICE:	(630) 766-2112

### SECTION 2. HAZARDS IDENTIFICATION

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#### CLASSIFICATION OF THE SUBSTANCE OR MIXTURE

#### GHS CLASSIFICATION IN ACCORDANCE WITH 29 CFR 1910 (OSHA HCS)

FLAMMABLE LIQUIDS (CATEGORY 4), H227  
ACUTE TOXICITY, ORAL (CATEGORY 3), H301  
ACUTE TOXICITY, INHALATION (CATEGORY 2), H330  
ACUTE TOXICITY, DERMAL (CATEGORY 4), H312

SKIN IRRITATION (CATEGORY 2), H315  
EYE IRRITATION (CATEGORY 2A), H319  
CARCINOGENICITY (CATEGORY 2), H351  
SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE (CATEGORY 3),  
RESPIRATORY SYSTEM, H335  
SHORT-TERM (ACUTE) AQUATIC HAZARD (CATEGORY 3), H402  
LONG-TERM (CHRONIC) AQUATIC HAZARD (CATEGORY 3), H412

FOR THE FULL TEXT OF THE H-STATEMENTS MENTIONED IN THIS SECTION, SEE SECTION 16.

**GHS LABEL ELEMENTS, INCLUDING PRECAUTIONARY STATEMENTS  
PICTOGRAM**



SIGNAL WORD

DANGER

**HAZARD STATEMENT(S)**

H227 COMBUSTIBLE LIQUID.  
H301 TOXIC IF SWALLOWED.  
H312 HARMFUL IN CONTACT WITH SKIN.  
H315 CAUSES SKIN IRRITATION.  
H319 CAUSES SERIOUS EYE IRRITATION.  
H330 FATAL IF INHALED.  
H335 MAY CAUSE RESPIRATORY IRRITATION.  
H351 SUSPECTED OF CAUSING CANCER.  
H412 HARMFUL TO AQUATIC LIFE WITH LONG LASTING EFFECTS.

**PRECAUTIONARY STATEMENT(S)**

P201 OBTAIN SPECIAL INSTRUCTIONS BEFORE USE.  
P202 DO NOT HANDLE UNTIL ALL SAFETY PRECAUTIONS HAVE BEEN READ AND UNDERSTOOD.  
P210 KEEP AWAY FROM HEAT/SPARKS/OPEN FLAMES/HOT SURFACES. NO SMOKING.  
P260 DO NOT BREATHE 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.  
P273 AVOID RELEASE TO THE ENVIRONMENT.  
P280 WEAR PROTECTIVE GLOVES/ PROTECTIVE CLOTHING/ EYE PROTECTION/ FACE PROTECTION.  
P284 WEAR RESPIRATORY PROTECTION.  
P301 + P310 + P330 IF SWALLOWED: IMMEDIATELY CALL A POISON CENTER/DOCTOR. RINSE MOUTH.  
P302 + P352 + P312 IF ON SKIN: WASH WITH PLENTY OF WATER. CALL A POISON CENTER/DOCTOR IF YOU FEEL UNWELL.  
P304 + P340 + P310 IF INHALED: REMOVE PERSON TO FRESH AIR AND KEEP COMFORTABLE FOR BREATHING. IMMEDIATELY CALL A POISON CENTER/DOCTOR.  
P305 + P351 + P338 IF IN EYES: RINSE CAUTIOUSLY WITH WATER FOR SEVERAL MINUTES. REMOVE CONTACT LENSES, IF PRESENT AND

P308 + P313	EASY TO DO. CONTINUE RINSING. IF EXPOSED OR CONCERNED: GET MEDICAL ADVICE/ ATTENTION.
P332 + P313	IF SKIN IRRITATION OCCURS: GET MEDICAL ADVICE/ ATTENTION.
P337 + P313	IF EYE IRRITATION PERSISTS: GET MEDICAL ADVICE/ ATTENTION.
P362	TAKE OFF CONTAMINATED CLOTHING AND WASH BEFORE REUSE.
P370 + P378	IN CASE OF FIRE: USE DRY SAND, DRY CHEMICAL OR ALCOHOL-RESISTANT FOAM TO EXTINGUISH.
P403 + P233	STORE IN A WELL-VENTILATED PLACE. KEEP CONTAINER TIGHTLY CLOSED.
P403 + P235	STORE IN A WELL-VENTILATED PLACE. KEEP COOL.
P405	STORE LOCKED UP.
P501	DISPOSE OF CONTENTS/ CONTAINER TO AN APPROVED WASTE DISPOSAL PLANT.
<b>HAZARDS NOT OTHERWISE CLASSIFIED (HNOC) OR NOT COVERED BY GHS</b>	PHOTOSENSITIZER.

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### SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

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MF:	C <sub>5</sub> H <sub>4</sub> O <sub>2</sub>
MW:	96.08
CAS-NO.	98-01-1
PURITY:	≥ 99%

#### HAZARDOUS COMPONENTS

COMPONENT	CLASSIFICATION	CONCENTRATION
<b>Furfural</b>	FLAM. LIQ. 4; ACUTE TOX. 3; ACUTE TOX. 2; ACUTE TOX. 4; SKIN IRRIT. 2; EYE IRRIT. 2A; CARC. 2; STOT SE 3; AQUATIC CHRONIC 3; H227, H301, H330, H312, H315, H319, H351, H335, H412	<= 100 %

FOR THE FULL TEXT OF THE H-STATEMENTS MENTIONED IN THIS SECTION, SEE SECTION 16.

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## SECTION 4. FIRST-AID MEASURES

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### DESCRIPTION OF FIRST AID MEASURES

<b>GENERAL ADVICE</b>	CONSULT A PHYSICIAN. SHOW THIS SAFETY DATA SHEET TO THE DOCTOR IN ATTENDANCE.MOVE OUT OF DANGEROUS AREA.
<b>IF INHALED</b>	IF BREATHED IN, MOVE PERSON INTO FRESH AIR. IF NOT BREATHING, GIVE ARTIFICIAL RESPIRATION. CONSULT A PHYSICIAN.
<b>IN CASE OF SKIN CONTACT</b>	WASH OFF WITH SOAP AND PLENTY OF WATER. TAKE VICTIM IMMEDIATELY TO HOSPITAL. CONSULT A PHYSICIAN.
<b>IN CASE OF EYE CONTACT</b>	RINSE THOROUGHLY WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES AND CONSULT A PHYSICIAN.
<b>IF SWALLOWED</b>	DO NOT INDUCE VOMITING. NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON. RINSE MOUTH WITH WATER. CONSULT A PHYSICIAN.
<b>MOST IMPORTANT SYMPTOMS AND EFFECTS, BOTH ACUTE AND DELAYED</b>	THE MOST IMPORTANT KNOWN SYMPTOMS AND EFFECTS ARE DESCRIBED IN THE LABELLING (SEE SECTION 2.2) AND/OR IN SECTION 11.
<b>INDICATION OF ANY IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDED</b>	NO DATA AVAILABLE

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## SECTION 5. FIRE AND EXPLOSION DATA

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### EXTINGUISHING MEDIA

<b>SUITABLE EXTINGUISHING MEDIA</b>	SUITABLE EXTINGUISHING MEDIA USE WATER SPRAY, ALCOHOL-RESISTANT FOAM, DRY CHEMICAL OR CARBON DIOXIDE.
	UNSUITABLE EXTINGUISHING MEDIA DO NOT USE WATER JET.
<b>SPECIAL HAZARDS ARISING FROM THE SUBSTANCE OR MIXTURE</b>	CARBON OXIDES

<b>ADVICE FOR FIREFIGHTERS</b>	WEAR SELF-CONTAINED BREATHING APPARATUS FOR FIREFIGHTING IF NECESSARY.
<b>FURTHER INFORMATION</b>	USE WATER SPRAY TO COOL UNOPENED CONTAINERS.

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## **SECTION 6. ACCIDENTAL RELEASE MEASURES**

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<b>PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES</b>	WEAR RESPIRATORY PROTECTION. AVOID BREATHING VAPOURS, MIST OR GAS. ENSURE ADEQUATE VENTILATION. REMOVE ALL SOURCES OF IGNITION. EVACUATE PERSONNEL TO SAFE AREAS. BEWARE OF VAPOURS ACCUMULATING TO FORM EXPLOSIVE CONCENTRATIONS. VAPOURS CAN ACCUMULATE IN LOW AREAS. FOR PERSONAL PROTECTION SEE SECTION 8.
<b>ENVIRONMENTAL PRECAUTIONS</b>	PREVENT FURTHER LEAKAGE OR SPILLAGE IF SAFE TO DO SO. DO NOT LET PRODUCT ENTER DRAINS. DISCHARGE INTO THE ENVIRONMENT MUST BE AVOIDED.
<b>METHODS AND MATERIALS FOR CONTAINMENT AND CLEANING UP</b>	CONTAIN SPILLAGE, AND THEN COLLECT WITH NON-COMBUSTIBLE ABSORBENT MATERIAL, (E.G. SAND, EARTH, DIATOMACEOUS EARTH, VERMICULITE) AND PLACE IN CONTAINER FOR DISPOSAL ACCORDING TO LOCAL / NATIONAL REGULATIONS (SEE SECTION 13). KEEP IN SUITABLE, CLOSED CONTAINERS FOR DISPOSAL.
<b>REFERENCE TO OTHER SECTIONS</b>	FOR DISPOSAL SEE SECTION 13.

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## **SECTION 7. HANDLING AND STORAGE**

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<b>PRECAUTIONS FOR SAFE HANDLING</b>	AVOID CONTACT WITH SKIN AND EYES. AVOID INHALATION OF VAPOUR OR MIST. KEEP AWAY FROM SOURCES OF IGNITION - NO SMOKING. TAKE MEASURES TO PREVENT THE BUILD UP OF ELECTROSTATIC CHARGE. FOR PRECAUTIONS SEE SECTION 2.2.
<b>CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES</b>	KEEP CONTAINER TIGHTLY CLOSED IN A DRY AND WELL-VENTILATED PLACE. CONTAINERS WHICH ARE OPENED MUST BE CAREFULLY RESEALED AND KEPT UPRIGHT TO PREVENT LEAKAGE.

Store at 0-8°C

**SPECIFIC END USE(S)**

APART FROM THE USES MENTIONED IN SECTION 1.2  
NO OTHER SPECIFIC USES ARE STIPULATED

**SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION****CONTROL PARAMETERS****COMPONENTS WITH WORKPLACE CONTROL PARAMETERS**

COMPONENT	CAS-NO	VALUE	CONTROL PARAMETERS	BASIS
Furfural	98-01-1	TWA	0.2 PPM	USA. ACGIH THRESHOLD LIMIT VALUES (TLV)
	REMARKS	UPPER RESPIRATORY TRACT IRRITATION EYE IRRITATION SUBSTANCES FOR WHICH THERE IS A BIOLOGICAL EXPOSURE INDEX OR INDICES (SEE BEI SECTION) CONFIRMED ANIMAL CARCINOGEN WITH UNKNOWN RELEVANCE TO HUMANS DANGER OF CUTANEOUS ABSORPTION		
		SEE APPENDIX D - SUBSTANCES WITH NO ESTABLISHED RELS		
		TWA	5 PPM 20 MG/M3	USA. OCCUPATIONAL EXPOSURE LIMITS (OSHA) - TABLE Z-1 LIMITS FOR AIR CONTAMINANTS
		SKIN DESIGNATION THE VALUE IN MG/M3 IS APPROXIMATE.		
		PEL	2 PPM 8 MG/M3	CALIFORNIA PERMISSIBLE EXPOSURE LIMITS FOR CHEMICAL CONTAMINANTS
		SKIN		

**BIOLOGICAL OCCUPATIONAL EXPOSURE LIMITS**

COMPONENT	CAS-NO.	PARAMETERS	VALUE	BIOLOGICAL SPECIMEN	BASIS
Furfural	98-01-1	FUROIC ACID	200 MG/L	URINE	ACGIH - BIOLOGICAL EXPOSURE INDICES (BEI)
	REMARKS	END OF SHIFT (AS SOON AS POSSIBLE AFTER EXPOSURE CEASES)			

**EXPOSURE CONTROLS****APPROPRIATE ENGINEERING CONTROLS**

AVOID CONTACT WITH SKIN, EYES AND CLOTHING. WASH HANDS BEFORE BREAKS AND IMMEDIATELY AFTER HANDLING THE PRODUCT.

## **PERSONAL PROTECTIVE EQUIPMENT**

**EYE/FACE PROTECTION** FACE SHIELD AND SAFETY GLASSES USE EQUIPMENT FOR EYE PROTECTION TESTED AND APPROVED UNDER APPROPRIATE GOVERNMENT STANDARDS SUCH AS NIOSH (US) OR EN 166(EU).

**SKIN PROTECTION** HANDLE WITH GLOVES. GLOVES MUST BE INSPECTED PRIOR TO USE. USE PROPER GLOVE REMOVAL TECHNIQUE (WITHOUT TOUCHING GLOVE'S OUTER SURFACE) TO AVOID SKIN CONTACT WITH THIS PRODUCT. DISPOSE OF CONTAMINATED GLOVES AFTER USE IN ACCORDANCE WITH APPLICABLE LAWS AND GOOD LABORATORY PRACTICES. WASH AND DRY HANDS.

FULL CONTACT  
MATERIAL: BUTYL-RUBBER  
MINIMUM LAYER THICKNESS: 0.3 MM  
BREAK THROUGH TIME: 480 MIN  
MATERIAL TESTED: BUTOJECT (KCL 897, SIZE M)

SPLASH CONTACT  
MATERIAL: NITRILE RUBBER  
MINIMUM LAYER THICKNESS: 0.4 MM  
BREAK THROUGH TIME: 30 MIN  
MATERIAL TESTED: CAMATRIL (KCL 730, SIZE M)

IF USED IN SOLUTION, OR MIXED WITH OTHER SUBSTANCES, AND UNDER CONDITIONS WHICH DIFFER FROM EN 374, CONTACT THE SUPPLIER OF THE CE APPROVED GLOVES. THIS RECOMMENDATION IS ADVISORY ONLY AND MUST BE EVALUATED BY AN INDUSTRIAL HYGIENIST AND SAFETY OFFICER FAMILIAR WITH THE SPECIFIC SITUATION OF ANTICIPATED USE BY OUR CUSTOMERS. IT SHOULD NOT BE CONSTRUED AS OFFERING AN APPROVAL FOR ANY SPECIFIC USE SCENARIO.

**BODY PROTECTION** COMPLETE SUIT PROTECTING AGAINST CHEMICALS, THE TYPE OF PROTECTIVE EQUIPMENT MUST BE SELECTED ACCORDING TO THE CONCENTRATION AND AMOUNT OF THE DANGEROUS SUBSTANCE AT THE SPECIFIC WORKPLACE.

**RESPIRATORY PROTECTION** WHERE RISK ASSESSMENT SHOWS AIR-PURIFYING RESPIRATORS ARE APPROPRIATE USE A FULLFACE RESPIRATOR WITH MULTI-PURPOSE COMBINATION (US) OR TYPE ABEK (EN 14387) RESPIRATOR CARTRIDGES AS A BACKUP TO ENGINEERING CONTROLS. IF THE RESPIRATOR IS THE SOLE MEANS OF PROTECTION, USE A FULL-FACE SUPPLIED AIR RESPIRATOR. USE RESPIRATORS AND COMPONENTS TESTED AND APPROVED UNDER APPROPRIATE GOVERNMENT STANDARDS SUCH AS NIOSH (US) OR CEN (EU).

**CONTROL OF ENVIRONMENTAL EXPOSURE**      PREVENT FURTHER LEAKAGE OR SPILLAGE IF SAFE TO DO SO.  
DO NOT LET PRODUCT ENTER DRAINS.  
DISCHARGE INTO THE ENVIRONMENT MUST BE AVOIDED.

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## **SECTION 9.      PHYSICAL AND CHEMICAL PROPERTIES**

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### **INFORMATION ON BASIC PHYSICAL AND CHEMICAL PROPERTIES**

APPEARANCE	Slightly brown clear, viscous liquid
ODOUR	NO DATA AVAILABLE
ODOUR THRESHOLD	NO DATA AVAILABLE
PH	NO DATA AVAILABLE
MELTING POINT/FREEZING POINT	- 36 °C
INITIAL BOILING POINT AND BOILING RANGE	162 °C
FLASH POINT	61.7 °C
EVAPORATION RATE	NO DATA AVAILABLE
FLAMMABILITY (SOLID, GAS)	NO DATA AVAILABLE
UPPER/LOWER FLAMMABILITY OR EXPLOSIVE LIMITS	UPPER EXPLOSION LIMIT: 19.3 %(V) LOWER EXPLOSION LIMIT: 2.1 %(V)
VAPOUR PRESSURE	18.0 HPA AT 55 C 2.3 HPA AT 20 C
VAPOUR DENSITY	3.32 - (AIR = 1.0)
RELATIVE DENSITY	1.16
WATER SOLUBILITY	SOLUBLE
PARTITION COEFFICIENT: N- OCTANOL/WATER	LOG POW: 0.41
AUTO-IGNITION TEMPERATURE	NO DATA AVAILABLE
DECOMPOSITION TEMPERATURE	NO DATA AVAILABLE
VISCOSITY	NO DATA AVAILABLE
EXPLOSIVE PROPERTIES	NO DATA AVAILABLE
OXIDIZING PROPERTIES	NO DATA AVAILABLE

### **OTHER SAFETY INFORMATION**

SURFACE TENSION	43.5 MN/M AT 20 C
RELATIVE VAPOUR DENSITY	3.32 - (AIR = 1.0)

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## **SECTION 10.      STABILITY AND REACTIVITY**

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<b>REACTIVITY</b>	NO DATA AVAILABLE
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<b>CHEMICAL STABILITY</b>	STABLE UNDER RECOMMENDED STORAGE CONDITIONS.
<b>POSSIBILITY OF HAZARDOUS REACTIONS</b>	NO DATA AVAILABLE
<b>CONDITIONS TO AVOID</b>	HEAT, FLAMES AND SPARKS.
<b>INCOMPATIBLE MATERIALS</b>	OXIDIZING AGENTS, STRONG ACIDS
<b>HAZARDOUS DECOMPOSITION PRODUCTS</b>	HAZARDOUS DECOMPOSITION PRODUCTS FORMED UNDER FIRE CONDITIONS. - CARBON OXIDES OTHER DECOMPOSITION PRODUCTS - NO DATA AVAILABLE IN THE EVENT OF FIRE: SEE SECTION 5

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## SECTION 11. TOXICOLOGICAL INFORMATION

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### INFORMATION ON TOXICOLOGICAL EFFECTS

<b>ACUTE TOXICITY</b>	LD50 ORAL - RAT - MALE AND FEMALE - 108 MG/KG (OECD TEST GUIDELINE 401)
	LC50 INHALATION - RAT - MALE AND FEMALE - 4 H - > 0.54 - < 1.63 MG/L (OECD TEST GUIDELINE 403)
	DERMAL: NO DATA AVAILABLE
	NO DATA AVAILABLE
<b>SKIN CORROSION/IRRITATION</b>	SKIN RABBIT RESULT: IRRITATING TO SKIN. - 4 H (OECD TEST GUIDELINE 404) (REGULATION (EC) NO 1272/2008, ANNEX VI)
<b>SERIOUS EYE DAMAGE/EYE IRRITATION</b>	EYES RABBIT RESULT: CAUSES SERIOUS EYE IRRITATION. - 24 H (OECD TEST GUIDELINE 405) (REGULATION (EC) NO 1272/2008, ANNEX VI)
<b>RESPIRATORY OR SKIN SENSITISATION</b>	MAXIMISATION TEST - GUINEA PIG RESULT: NEGATIVE (OECD TEST GUIDELINE 406)

**GERM CELL  
MUTAGENICITY**

AMES TEST  
SALMONELLA TYPHIMURIUM  
RESULT: NEGATIVE  
IN VITRO MAMMALIAN CELL GENE MUTATION TEST  
MOUSE LYMPHOMA CELLS  
RESULT: POSITIVE  
CHROMOSOME ABERRATION TEST IN VITRO  
CHINESE HAMSTER OVARY CELLS  
RESULT: POSITIVE  
OECD TEST GUIDELINE 486  
MOUSE - MALE AND FEMALE - LIVER CELLS  
RESULT: NEGATIVE  
US-EPA  
MOUSE - MALE - LIVER CELLS  
RESULT: NEGATIVE  
OECD TEST GUIDELINE 475  
MOUSE - MALE - BONE MARROW  
RESULT: NEGATIVE  
OECD TEST GUIDELINE 486  
RAT - MALE - LIVER CELLS  
RESULT: NEGATIVE

**CARCINOGENICITY**

IARC:

SUSPECTED OF CAUSING CANCER.  
NO COMPONENT OF THIS PRODUCT PRESENT AT  
LEVELS GREATER THAN OR EQUAL TO 0.1% IS  
IDENTIFIED AS PROBABLE, POSSIBLE OR CONFIRMED  
HUMAN CARCINOGEN BY IARC.

NTP:

NO COMPONENT OF THIS PRODUCT PRESENT AT  
LEVELS GREATER THAN OR EQUAL TO 0.1% IS  
IDENTIFIED AS A KNOWN OR ANTICIPATED  
CARCINOGEN BY NTP.

OSHA:

NO COMPONENT OF THIS PRODUCT PRESENT AT  
LEVELS GREATER THAN OR EQUAL TO 0.1% IS ON  
OSHA S LIST OF REGULATED CARCINOGENS.

**REPRODUCTIVE TOXICITY**

NO DATA AVAILABLE

**SPECIFIC TARGET ORGAN  
TOXICITY - SINGLE  
EXPOSURE**

MAY CAUSE RESPIRATORY IRRITATION.  
CLASSIFIED ACCORDING TO REGULATION (EU)  
1272/2008, ANNEX VI (TABLE 3.1/3.2)

**SPECIFIC TARGET ORGAN  
TOXICITY - REPEATED  
EXPOSURE**

NO DATA AVAILABLE

**ASPIRATION HAZARD**

NO DATA AVAILABLE

**ADDITIONAL  
INFORMATION**

REPEATED DOSE TOXICITY - RAT - MALE - 13 WEEKS -  
NO OBSERVED ADVERSE EFFECT LEVEL - 53 MG/KG

RTECS: LT7000000

CENTRAL NERVOUS SYSTEM DEPRESSION,  
HEADACHE, MATERIAL IS EXTREMELY  
DESTRUCTIVE TO TISSUE OF THE MUCOUS  
MEMBRANES AND UPPER RESPIRATORY TRACT,  
EYES, AND SKIN, COUGH  
TO THE BEST OF OUR KNOWLEDGE, THE CHEMICAL,  
PHYSICAL, AND TOXICOLOGICAL PROPERTIES HAVE  
NOT BEEN THOROUGHLY INVESTIGATED.

STOMACH - IRREGULARITIES - BASED ON HUMAN  
EVIDENCE

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**SECTION 12. ECOLOGICAL INFORMATION**

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**TOXICITY**

**TOXICITY TO FISH**

SEMI-STATIC TEST LC50 - POECILIA RETICULATA  
(GUPPY) - 10.5 MG/L - 14 DAYS  
(OECD TEST GUIDELINE 204)

**TOXICITY TO ALGAE**

STATIC TEST NOEC - MICROCYSTIS AERUGINOSA  
(BLUE-GREEN ALGAE) - 2.7 MG/L - 8 DAYS  
(OECD TEST GUIDELINE 201)

**PERSISTENCE AND DEGRADABILITY**

**BIODEGRADABILITY**

AEROBIC - EXPOSURE TIME 14 D  
RESULT: 100 % - READILY BIODEGRADABLE.  
(OECD TEST GUIDELINE 301C)

**BIOACCUMULATIVE  
POTENTIAL**

NO DATA AVAILABLE

**MOBILITY IN SOIL**

NO DATA AVAILABLE

**RESULTS OF PBT AND  
VPVB ASSESSMENT**

PBT/VPVB ASSESSMENT NOT AVAILABLE AS  
CHEMICAL SAFETY ASSESSMENT NOT  
REQUIRED/NOT CONDUCTED

**OTHER ADVERSE EFFECTS**

AN ENVIRONMENTAL HAZARD CANNOT BE  
EXCLUDED IN THE EVENT OF UNPROFESSIONAL  
HANDLING OR DISPOSAL.  
HARMFUL TO AQUATIC LIFE WITH LONG LASTING  
EFFECTS.

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**SECTION 13. DISPOSAL CONSIDERATIONS**

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**WASTE TREATMENT METHODS**

<b>PRODUCT</b>	CONTACT A LICENSED PROFESSIONAL WASTE DISPOSAL SERVICE TO DISPOSE OF THIS MATERIAL. OFFER SURPLUS AND NON-RECYCLABLE SOLUTIONS TO A LICENSED DISPOSAL COMPANY. THIS COMBUSTIBLE MATERIAL MAY BE BURNED IN A CHEMICAL INCINERATOR EQUIPPED WITH AN AFTERBURNER AND SCRUBBER.
<b>CONTAMINATED PACKAGING</b>	DISPOSE OF AS UNUSED PRODUCT.

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**SECTION 14. TRANSPORT INFORMATION**

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**DOT (US)**  
PROPER SHIPPING NAME: FURALDEHYDES  
UN NUMBER: 1199  
CLASS: 6.1 (3)  
PACKING GROUP: II  
REPORTABLE QUANTITY (RQ): 5000 LBS  
POISON INHALATION HAZARD: NO

**IMDG**  
PROPER SHIPPING NAME: FURALDEHYDES  
UN NUMBER: 1199  
CLASS: 6.1 (3)  
PACKING GROUP: II  
EMS-NO: F-E, S-D

**IATA**  
PROPER SHIPPING NAME: FURALDEHYDES  
UN NUMBER: 1199  
CLASS: 6.1 (3)  
PACKING GROUP: II

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**SECTION 15. REGULATORY INFORMATION**

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<b>SARA 302 COMPONENTS</b>	NO CHEMICALS IN THIS MATERIAL ARE SUBJECT TO THE REPORTING REQUIREMENTS OF SARA TITLE III, SECTION 302.
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**SARA 313 COMPONENTS** THIS MATERIAL DOES NOT CONTAIN ANY CHEMICAL COMPONENTS WITH KNOWN CAS NUMBERS THAT EXCEED THE THRESHOLD (DE MINIMIS) REPORTING LEVELS ESTABLISHED BY SARA TITLE III, SECTION 313.

**SARA 311/312 HAZARDS** FIRE HAZARD, ACUTE HEALTH HAZARD, CHRONIC HEALTH HAZARD

**MASSACHUSETTS RIGHT TO KNOW COMPONENTS**  
NO COMPONENTS ARE SUBJECT TO THE MASSACHUSETTS RIGHT TO KNOW ACT.

**PENNSYLVANIA RIGHT TO KNOW COMPONENTS**

	CAS-NO.	REVISION DATE
Furfural	98-01-1	02/16/1993

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**SECTION 16. OTHER INFORMATION**

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**FULL TEXT OF H-STATEMENTS REFERRED TO UNDER SECTIONS 2 AND 3.**

H227	COMBUSTIBLE LIQUID.
H301	TOXIC IF SWALLOWED.
H312	HARMFUL IN CONTACT WITH SKIN.
H315	CAUSES SKIN IRRITATION.
H319	CAUSES SERIOUS EYE IRRITATION.
H330	FATAL IF INHALED.
H335	MAY CAUSE RESPIRATORY IRRITATION.
H351	SUSPECTED OF CAUSING CANCER.
H412	HARMFUL TO AQUATIC LIFE WITH LONG LASTING EFFECTS.

**MSDS LEGEND**

MW:	MOLECULAR WEIGHT
MF:	MOLECULAR FORMULA
VOC:	VOLATILE ORGANIC COMPOUNDS
ACGIH:	AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGINISTS
CAS:	CHEMICAL ABSTRACTS SERIVE REGISTRY NUMBER
OSHA:	OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
PEL:	PERMISSIBLE EXPOSURE LIMIT (OSHA)
TLV:	THRESHOLD LIMIT VALUE (ACGIH)

**IMPORTANT:**

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