MATERIAL SAFETY DATA SHEET (MSDS) MSDS: L0626

This MSDS should be attached or kept with the respective product with which it is associated.

MATERIAL SAFETY DATA SHEET

DRAGER SAFETY

REVISION 0: 2/15/2005

MATERIAL NAME:
DRAEGER TUBES(TM) (WHICH ARE NOT CLASSIFIED AS DANGEROUS GOODS)

ID: 4594615

SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT USE: DETECTION OF GASES, MEASURING OF GAS CONCENTRATIONS.

MANUFACTURER INFORMATION:
DRAGER SAFETY AG & CO. KGAA
REVALSTR. 1
23560 LUBECK
GERMANY

DISTRIBUTOR/CONTACT INFORMATION:
DRAEGER SAFETY, INC
101 TECHNOLOGY DRIVE
PITTSBURGH, PA 15275-1057

PHONE: (412) 787-8383

FAX: (412) 787-2207

EMERGENCY #: 1-800-424-9300 (CHEMTREC)

GENERAL COMMENTS:

NOTE:
EMERGENCY TELEPHONE NUMBERS ARE TO BE USED ONLY IN THE EVENT OF CHEMICAL EMERGENCIES INVOLVING A SPILL, LEAK, FIRE, EXPOSURE, OR ACCIDENT INVOLVING CHEMICALS. ALL NON-EMERGENCY QUESTIONS SHOULD BE DIRECTED TO CUSTOMER SERVICE.

RELEVANT PRODUCTS:

PART NO.	TRADE NAME
67 26 665	ACETALDEHYDE 100/A
67 22 101	ACETIC ACID 5/A
[illegible]3 381	ACETONE 40/A
CH 26 901	ACRYLONITRILE 5/B
CH 29 701	ALCOHOL 100/A
81 01 061	AMINE TEST
CH 31 901	AMMONIA 0.5%/A
67 33 231	AMMONIA 2/A
CH 20 501	AMMONIA 5/A
67 33 171	ANILINE 0.5/A
CH 25 001	ARSINE 0.05/A
67 28 561	BENZENE 0.5/A
81 01 691	PETROLEUM HYDROCARBONS 10A
81 01 161	BUTADIENE 10/A-D
CH 23 501	CARBON DIOXIDE 0.1%/A
CH 25 101	CARBON DIOXIDE 1%/A
81 01 811	CARBON DIOXIDE 100/A
67 28 611	CARBON DIOXIDE 1000/A-L
81 01 381	CARBON DIOXIDE 500/A-D
CH 23 201	CARBON DISULPHIDE 30/A
81 03 321	CARBON MONOXIDE 10/D
81 01 791	CARBON TETRACHLORIDE 0.2/B
CH 27 401	CARBON TETRACHLORIDE 5/C
81 03 150	CDS SET II
81 03 200	CDS SET V
67 28 411	CHLORINE 0.3/B
67 28 761	CHLOROBENZENE 5/A
[illegible]18 901	CHLOROPRENE 5/A
[illegible]28 791	CYANIDE 2/A
67 25 201	CYCLOHEXANE 100/A
67 30 501	DIETHYL ETHER 100/A
67 18 701	DIMETHYL SULPHATE 0.005/C
67 28 111	EPICHLOROHYDRIN 5/B
CH 20 201	ETHYL ACETATE 200/A
67 26 801	ETHYL GLYCOL ACETATE 50/A
81 01 071	ACETIC ACID 10/A-D
CH 22 901	ACETONE 100/B
67 28 591	ACRYLONITRILE 0.5/A
81 01 141	ACTIVE TUBE FOR FORMALDEHYDE 0.2A
81 01 631	ALCOHOL 25/A
81 01 711	AMMONIA 0.25/A
67 28 231	AMMONIA 10/A-L
81 01 301	AMMONIA 20/A-D
81 01 941	AMMONIA 5/B
CH 20 401	ANILINE 5/A
81 03 410	FUMIGATION-TEST-SET
67 18 801	BENZENE 5/A
67 30 201	PETROLEUM HYDROCARBONS 100A
CH 30 801	CARBON DIOXIDE 0.01%/A
CH 31 401	CARBON DIOXIDE 0.5%/A
81 01 051	CARBON DIOXIDE 1% A-D
67 28 521	CARBON DIOXIDE 100/A-P
CH 20 301	CARBON DIOXIDE 5%/A
81 01 891	CARBON DISULPHIDE 3/A
81 01 951	CARBON MONOXIDE 10/C
67 33 191	CARBON MONOXIDE 50/A-D
81 01 021	CARBON TETRACHLORIDE 1/A
81 03 140	CDS SET I
81 03 160	CDS SET III
CH 24 301	CHLORINE 0.2/A
CH 20 701	CHLORINE 50/A
67 18 601	CHLOROFORMATES 0.2/B
67 28 681	CHROMIC ACID 0.1/A
CH 19 801	CYANOGEN CHLORIDE 0.25/A
67 28 931	CYCLOHEXYLAMINE 2/A
67 18 501	DIMETHYL FORMAMIDE 10/B
67 28 451	DIMETHYL SULPHIDE 1/A
81 01 151	ETHANOL 1000/A-D
67 28 381	ETHYL BENZENE 30/A
81 01 331	ETHYLENE 0.1/A
81 01 351	ETHYLENE GLYCOL 10
67 28 241	ETHYLENE OXIDE 25/A
67 33 081	FORMALDEHYDE 0.2/A
67 22 701	FORMIC ACID 1/A
81 03 351	HYDRAZINE 0.01/A
CH 31 801	HYDRAZINE 0.25/A
81 01 681	HYDROCHLORIC ACID / NITRIC ACID 1/A
67 33 111	HYDROCHLORIC ACID 10/A-D
CH 25 701	HYDROCYANIC ACID 2/A
81 01 511	HYDROGEN 0.2%/A
81 03 251	HYDROGEN FLUORIDE 0.5/A
81 01 041	HYDROGEN PEROXIDE 0.1/A
CH 28 101	HYDROGEN SULPHIDE 0.2%/A
81 01 991	HYDROGEN SULPHIDE 0.2/B
67 19 001	HYDROGEN SULPHIDE 1/C
67 33 091	HYDROGEN SULPHIDE 10/A-D
81 01 211	HYDROGEN SULPHIDE 2%/A

81 01 961	HYDROGEN SULPHIDE 2/B
CH 29 801	HYDROGEN SULPHIDE 5/B
67 28 981	MERCAPTAN 0.5/A
CH 23 101	MERCURY VAPOR 0.1/B
81 01 671	METHYL BROMIDE 0.5/A
7 301	METHYL BROMIDE 5/B
9 501	NICKEL TETRACARBONYL 0.1/A
CH 30 001	NITROGEN DIOXIDE 0.5/C
67 19 101	NITROGEN DIOXIDE 2/C
CH 31 001	NITROUS FUMES 2/A
67 28 911	NITROUS FUMES 5/A-L
CH 27 701	NITROUS FUMES 100/C
CH 26 303	ORGANIC ARSENIC COMPOUNDS
67 33 181	OZONE 0.05/B
67 24 701	PENTANE 100/A
CH 30 701	PERCHLOROETHYLENE 10/B
81 01 401	PERCHLOROETHYLENE 200/A-D
81 01 521	PHOSGENE 0.02/A
CH 28 301	PHOSGENE 0.25/C
CH 31 101	PHOSPHINE 0.1/A
81 01 801	PHOSPHINE 1/A
CH 21 201	PHOSPHINE 50/A
67 28 651	PYRIDINE 5/A
81 03 380	SIMULTANEOUS TEST-SET FOR CONTAINER FUMIGATION
81 01 735	SIMULTANEOUS TEST-SET I FOR INORGANIC FUMES
81 01 770	SIMULTANEOUS TEST-SET III FOR ORGANIC VAPORS
CH 27 601	STYRENE 50/A
67 28 491	SULPHUR DIOXIDE 0.5/A
67 28 921	SULPHUR DIOXIDE 2/A-L
81 01 091	SULPHUR DIOXIDE 5/A-D
67 28 781	SULPHURIC ACID 1/A
5 803	THIOETHER
1 01 421	TOLUENE 100/A-D
81 01 661	TOLUENE 5/B
67 24 501	TOLUENE DIISOCYANATE 0.02/A
CH 24 401	TRICHLOROETHYLENE 10/A
81 01 441	TRICHLOROETHYLENE 200/A-D
67 18 401	TRIETHYLAMINE 5/A
67 28 031	VINYL CHLORIDE 1/A
CH 23 401	WATER VAPOR 0.1
81 01 081	WATER VAPOR 1/A
81 03 061	WATER VAPOR 20/A-P
67 28 961	ETHYLENE OXIDE 1/A
81 01 491	FLUORINE 0.1/A
81 01 751	FORMALDEHYDE 2/A
67 28 391	HEXANE 100/A
67 33 121	HYDRAZINE 0.2/A
67 28 571	HYDRO CARBON 100/A-L
CH 29 501	HYDROCHLORID ACID 1/A
67 28 181	HYDROCHLORIC ACID 50/A
67 33 221	HYDROCYANIC ACID 20/A-D
CH 30 901	HYDROGEN 0.5%/A
CH 30 301	HYDROGEN FLUORIDE 1.5/B
CH 28 201	HYDROGEN SULPHIDE + SULPHUR DIOXIDE 0.2%/A
81 01 461	HYDROGEN SULPHIDE 0.2/A
67 28 041	HYDROGEN SULPHIDE 0.5/A
01 831	HYDROGEN SULPHIDE 1/D
29 101	HYDROGEN SULPHIDE 100/A
67 28 821	HYDROGEN SULPHIDE 2/A
67 28 141	HUDROGEN SULPHIDE 5/A-L
81 03 281	MERCAPTAN 0.1/A
81 01 871	MERCAPTAN 20/A
81 03 391	METHYL BROMIDE 0.2/A
67 28 211	METHYL BROMIDE 3/A
81 03 071	NATURAL GAS ODORIZATION, TERT-BUTYL MERCAPTAN (TBM)
67 28 311	NITRIC ACID 1/A
81 01 111	NITROGEN DIOXIDE 10/A-D
CH 29 401	NITROUS FUMES 0.5/A
67 24 001	NITROUS FUMES 20/A
81 01 921	NITROUS FUMES 50/A
CH 31 201	OLEFINES 0.05%/A
CH 25 903	ORGANIC BASIC NITROGEN COMPOUNDS
CH 21 001	OZONE 10/A
81 01 551	PERCHLOROETHYLENE 0.1/A
81 01 501	PERCHLOROETHYLENE 2/A
81 01 641	PHENOL 1/B
CH 19 401	PHOSGENE 0.05/A
81 01 611	PHOSPHINE 0.01/A
81 03 341	PHOSPHINE 0.1/B IN ACETYLENE
81 01 621	PHOSPHINE 25/A
67 28 461	PHOSPHORIC ACID ESTER 0.05/A
81 01 121	ACID TEST
81 03 170	SIMULTANEOUS TEST SET INDICATOR SUBSTANCES
81 01 736	SIMULTANEOUS TEST-SET II FOR INORGANIC FUMES
67 23 301	STYRENE 10/A
67 27 101	SULPHUR DIOXIDE 0.1/A
CH 31 701	SULPHUR DIOXIDE 1/A
CH 24 201	SULPHUR DIOXIDE 20/A
81 01 531	SULPHUR DIOXIDE 50/B
81 01 341	TETRAHYDROTHIOPHENE 1/B
81 01 731	TOLUENE 100/A
CH 23 001	TOLUENE 5/A
81 01 701	TOLUENE 50/A
CH 21 101	TRICHLOROETHANE 50/D
67 28 541	TRICHLOROETHYLENE 2/A
81 01 881	TRICHLOROETHYLENE 50/A
81 01 721	VINYL CHLORIDE 0.5/B
CH 19 601	VINYL CHLORIDE 100/A
81 01 321	WATER VAPOR 0.1/A
81 01 781	WATER VAPOR 1/B
67 28 531	WATER VAPOR 5/A-P

SECTION 2 - COMPOSITION / INFORMATION ON INGREDIENTS

CAS #	COMPONENT	PERCENT*
NOT AVAILABLE	INERT CARRIER MATERIAL AND GLASS OF THE TUBE	<90
NOT AVAILABLE	COPPER SALTS	0-10
7803-57-8	HYDRAZINE HYDRATE	0-6
7664-93-9	SULFURIC ACID	0-5
110-86-1	PYRIDINE	0-5
NOT AVAILABLE	AMINE COMPOUNDS	0-3
7553-56-2	IODINE	0-3
NOT AVAILABLE	CHROMIUM (VI) SALTS	0-2
108-24-7	ACETIC ANHYDRIDE	0-1
NOT AVAILABLE	GOLD SALTS	0-1
NOT AVAILABLE	SELENIUM SALTS	0-1
NOT AVAILABLE	SODIUM SALTS	0-1
1330-20-7	XYLENE	0-1
95-53-4	o-TOLUIDINE	0-0.5
7647-01-0	HYDROCHLORIC ACID	0-0.5
NOT AVAILABLE	PALLADIUM, INORGANIC COMPOUNDS	0-0.2

7722-64-7	POTASSIUM PERMANGANATE	0-0.2
91-66-7	N,N-DIETHYLANILINE	0-0.2
10294-42-5	CERIUM SULFATE	0.1
2494-56-6	BUTYRYLCHOLINIODIDE	0-0.1
98-01-1	FURFUROL	0-0.1
NOT AVAILABLE	LEAD SALTS	0-0.1
[illegible]-98-0	IODINE PENTOXIDE	0-0.1
NOT AVAILABLE	SILVER SALTS	0-0.1
22752-98-3	PYRIDYLPYRIDINIUM CHLORIDE	0-0.1
13435-46-6	BARIUMCHLOROANILATE	0-0.1
50-00-0	FORMALDEHYDE	0-0.1
119-26-6	2,4-DINITROPHENYLHYDRAZINE	0-0.1
NOT AVAILABLE	MERCURY SALTS	0-0.1
119-90-4	o-DIANISIDINE	0-0.1
10034-81-8	MAGNESIUM PERCHLORATE	0-0.1
NOT AVAILABLE	BISMUTH COMPOUNDS	0-0.05
7440-67-7	ZIRCONIUM	0-0.0005

COMPONENT INFORMATION/INFORMATION ON NON-HAZARDOUS COMPONENTS:

THIS PRODUCT IS CONSIDERED NOT HAZARDOUS UNDER 29 CFR 1910.1200 (HAZARD COMMUNICATION).

*BASED ON THE GROSS WEIGHT OF THE DRAEGER-TUBE(TM).

THE INFORMATION CONTAINED IN THIS MSDS IS APPLICABLE TO THE CONTENTS OF THE DRAEGER-TUBE(TM).

SECTION 3 - HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW:
THIS PRODUCT IS A NON-FLAMMABLE, GRANULATE FILLED GLASS TUBE. CONTENTS OF THE TUBE ARE CORROSIVE TO THE EYES, SKIN, GASTROINTESTINAL TRACT AND MAY CAUSE IRRITATION TO THE RESPIRATORY TRACT. IMPROPER HANDLING, LEAKS AND/OR DAMAGE TO THE TUBE MAY RELEASE CAUSTIC SULFURIC ACID IN LIQUID OR SOLID FORM. TUBE CONTENTS MAY REACT VIGOROUSLY WITH WATER.

POTENTIAL HEALTH EFFECTS:

EYES:
EYE CONTACT WITH CONTENTS OF TUBE AND VAPOR OR MIST FROM THE TUBE MAY CAUSE CORROSIVE DAMAGE WITH SEVERE IRRITATION, BURNS, AND POSSIBLE EYE INJURY.

POTENTIAL HEALTH EFFECTS:

SKIN:
SKIN CONTACT WITH CONTENTS OF TUBE AND VAPOR OR MIST FROM THE TUBE MAY CAUSE CORROSIVE DAMAGE WITH SEVERE IRRITATION AND BURNS. BURNS MAY BE ENHANCED IN THE PRESENCE OF WATER.

POTENTIAL HEALTH EFFECTS:

INGESTION:
PRODUCT CONTENTS MAY BE HARMFUL OR FATAL IF SWALLOWED. THIS PRODUCT MAY PRODUCE CORROSIVE DAMAGE TO THE GASTROINTESTINAL TRACT IF IT IS SWALLOWED.

POTENTIAL HEALTH EFFECTS:

INHALATION:
INHALATION OF VAPOR OR MIST FROM TUBE CONTENTS MAY CAUSE SEVERE IRRITATION OR INJURY TO THE RESPIRATORY SYSTEM.

INHALATION OF VAPOR OR MIST FROM TUBE CONTENTS MAY CAUSE PULMONARY EDEMA, EMPHYSEMA, AND PERMANENT CHANGES IN PULMONARY FUNCTION

HMIS RATINGS:
HEALTH 3
FIRE 0
PHYSICAL HAZARD 2
PERS. PROT. GLOVES, SAFETY GLASSES WITH SIDE SHIELDS

HAZARD SCALE:
0 = MINIMAL
1 = SLIGHT
2 = MODERATE
3 = SERIOUS
4 = SEVERE
* = CHRONIC HAZARD

SECTION 4 - FIRST AID MEASURES

FIRST AID:

EYES:
IMMEDIATELY FLUSH EYES WITH WATER FOR AT LEAST 15 MINUTES, WHILE HOLDING EYELIDS OPEN. SEEK MEDICAL ATTENTION AT ONCE. DANGER OF CORNEAL CLOUDING.

FIRST AID:

SKIN:
RINSE WITH PLENTY OF WATER. DISCARD ANY SHOES OR CLOTHING ITEMS THAT CANNOT BE DECONTAMINATED. IF IRRITATION PERSISTS, GET MEDICAL ATTENTION.

FIRST AID:

INGESTION:
IF THE MATERIAL IS SWALLOWED, GET IMMEDIATE MEDICAL ATTENTION OR ADVICE - DO NOT INDUCE VOMITING.

FIRST AID:

INHALATION:
IF MIST OR VAPOR OF THIS PRODUCT IS INHALED, REMOVE PERSON IMMEDIATELY TO FRESH AIR. SEEK MEDICAL ATTENTION IF SYMPTOMS DEVELOP OR PERSIST.

FIRST AID:

NOTES TO PHYSICIAN:
TUBE CONTENTS CAN BE NEUTRALIZED WITH LIME AND WATER, OR RINSED WITH PLENTY OF WATER, THEN TREATED WITH POLYETHYLENE GLYCOL 400. AFTER INGESTION, THERE IS A DANGER OF THE ESOPHAGUS AND THE STOMACH BECOMING PERFORATED.

SECTION 5 - FIRE FIGHTING MEASURES

FLASH POINT: NOT APPLICABLE
METHOD USED: NOT APPLICABLE

UPPER FLAMMABLE LIMIT (UFL): NOT APPLICABLE
LOWER FLAMMABLE LIMIT (LFL): NOT APPLICABLE

AUTO IGNITION: NOT APPLICABLE

FLAMMABILITY CLASSIFICATION: NOT APPLICABLE

RATE OF BURNING: NOT APPLICABLE

GENERAL FIRE HAZARDS:
THIS MATERIAL IS NON-FLAMMABLE. CONTENTS OF TUBE AND VAPORS RELEASED FROM BROKEN TUBE MAY BE CORROSIVE TO EYES, SKIN, RESPIRATORY AND GASTROINTESTINAL TRACT. BURNS MAY BE ENHANCED IN THE PRESENCE OF WATER.

HAZARDOUS COMBUSTION PRODUCTS:
THERMAL DECOMPOSITION OF TUBE CONTENTS MAY PRODUCE TOXIC SULFUR OXIDES, CARBON MONOXIDE, ETC.

EXTINGUISHING MEDIA:
DRY CHEMICAL, CARBON DIOXIDE. ADAPT EXTINGUISHING MEDIA TO THE ENVIRONMENT. MATERIALS IN THE GLASS TUBES ARE NON-FLAMMABLE. AVOID DIRECT CONTACT OF THIS PRODUCT WITH WATER SINCE THIS CAN CAUSE A VIOLENT EXOTHERMIC REACTION.

FIRE FIGHTING EQUIPMENT/INSTRUCTIONS:
WEAR FULL PROTECTIVE CLOTHING, INCLUDING HELMET, SELF-CONTAINED POSITIVE PRESSURE OR PRESSURE DEMAND BREATHING APPARATUS, PROTECTIVE CLOTHING AND FACE MASK.

NFPA RATINGS:
HEALTH 3
FIRE 0
REACTIVITY 2

HAZARD SCALE:
0 = MINIMAL
1 = SLIGHT
2 = MODERATE
3 = SERIOUS
4 = SEVERE

SECTION 6 - ACCIDENTAL RELEASE MEASURES

CONTAINMENT PROCEDURES: NOT APPLICABLE.

CLEAN-UP PROCEDURES:
SWEEP UP OR SCRAPE BROKEN TUBES INTO CONTAINER FOR DISPOSAL. AVOID THE GENERATION OF DUSTS DURING CLEAN-UP. DO NOT PICK UP GLASS WITH BARE HANDS. DILUTE TUBE CONTENTS WITH WATER AND BAKING SODA. SHOVEL MATERIAL INTO APPROPRIATE CONTAINER FOR DISPOSAL. THOROUGHLY WASH THE AREA WITH WATER AFTER A SPILL OR LEAK CLEAN-UP.

EVACUATION PROCEDURES: ISOLATE AREA. KEEP UNNECESSARY PERSONNEL AWAY.

SPECIAL PROCEDURES:
FOLLOW ALL LOCAL, STATE, FEDERAL AND PROVINCIAL REGULATIONS FOR DISPOSAL.

SECTION 7 - HANDLING AND STORAGE

HANDLING PROCEDURES:
CONTENTS ARE CORROSIVE. DO NOT GET THIS MATERIAL IN CONTACT WITH SKIN OR EYES. DO NOT INHALE VAPORS OR MISTS OF THIS PRODUCT. AVOID CONTACT WITH WATER. TUBES ARE NOT RECOMMENDED FOR QUALITATIVE MASK FIT-TESTING. OPEN TUBES SHOULD BE CAPPED AND STORED IN A WELL VENTILATED AREA UNTIL THEY ARE DISPOSED OF OR COMPLETELY USED.

STORAGE PROCEDURES:
KEEP THE CONTAINER TIGHTLY CLOSED AND DRY. DO NOT STORE ABOVE 77 DEG. F (25 DEG. C). STORE THE PRODUCT IN ORIGINAL PACKAGING. THE EXPIRY DATE ON THE PACKAGING MUST BE CONSIDERED.

SECTION 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE GUIDELINES:

A:

GENERAL PRODUCT INFORMATION:
WITH NORMAL HANDLING OF PRODUCT THERE SHOULD BE NO EXPOSURE TO CONTENTS. HOWEVER, IF EXPOSURE DOES OCCUR, FOLLOW THE RECOMMENDED EXPOSURE LIMITS.

B:

COMPONENT EXPOSURE LIMITS:

SULFURIC ACID (7664-93-9):
ACGIH: 0.2 MG/M3 TWA (THORACIC FRACTION)
OSHA: 1 MG/M3 TWA
NIOSH: 1 MG/M3 TWA

PYRIDINE (110-86-1):
ACGIH: 1 PPM TWA

OSHA:
5 PPM TWA
15 MG/M3 TWA

NIOSH:
5 PPM TWA

15 MG/M3 TWA

IODINE (7553-56-2):

ACGIH: 0.1 PPM CEILING

OSHA:
0.1 PPM CEILING
1 MG/M3 CEILING

NIOSH:
[illegible]PPM CEILING
[illegible]/M3 CEILING

CHROMIUM (VI) SALTS (NOT AVAILABLE):
OSHA: 0.1 MG/M3 CEILING
NIOSH: 0.001 MG/M3 TWA (AS Cr)

XYLENE (1330-20-7):

ACGIH:
100 PPM TWA
150 PPM STEL

OSHA:
100 PPM TWA
435 MG/M3 TWA

150 PPM STEL
655 MG/M3 STEL

ACETIC ANHYDRIDE (108-24-7):

ACGIH: 5 PPM TWA

OSHA:
5 PPM CEILING
20 MG/M3 CEILING

NIOSH:
5 PPM CEILING
20 MG/M3 CEILING

o-TOLUIDINE (95-53-4):

ACGIH:
2 PPM TWA
SKIN: POTENTIAL FOR CUTANEOUS ABSORPTION

OSHA:
5 PPM TWA
22 MG/M3 TWA

PREVENT OR REDUCE SKIN ABSORPTION

NIOSH: POTENTIAL FOR DERMAL ABSORPTION

HYDROCHLORIC ACID (7647-01-0):

ACGIH: 2 PPM CEILING

OSHA:
[illegible]PM CEILING
[illegible]/M3 CEILING

NIOSH:
5 PPM CEILING
7 MG/M3 CEILING

FURFUROL (98-01-1):

ACGIH: 2 PPM TWA

SKIN: POTENTIAL FOR CUTANEOUS ABSORPTION

OSHA:
2 PPM TWA
8 MG/M3 TWA

PREVENT OR REDUCE SKIN ABSORPTION

FORMALDEHYDE (50-00-0):

ACGIH: 0.3 PPM CEILING

OSHA:

0.75 PPM TWA

2 PPM STEL

0.5 PPM ACTION LEVEL (IRRITANT AND POTENTIAL CANCER HAZARD - SEE 29 CFR 1910.1048)

NIOSH:
0.016 PPM TWA
0.1 PPM CEILING (15 MIN)

ZIRCONIUM (7440-67-7):

ACGIH:
5 MG/M3 TWA
10 MG/M3 STEL

OSHA:
5 MG/M3 TWA
10 MG/M3 STEL

NIOSH:
5 MG/M3 TWA
10 MG/M3 STEL

ENGINEERING CONTROLS: USE GENERAL VENTILATION.

[illegible]SONAL PROTECTIVE EQUIPMENT:

PERSONAL PROTECTIVE EQUIPMENT:

EYES/FACE: WEAR SAFETY GLASSES WITH SIDE SHIELDS.

PERSONAL PROTECTIVE EQUIPMENT:

SKIN:
USE IMPERVIOUS GLOVES. OBSERVE THE GLOVE MANUFACTURER'S INSTRUCTIONS ON PERMEABILITY AND RUPTURE TIMES AS WELL AS THE SPECIFIC WORKPLACE CONDITIONS. WASH THOROUGHLY AFTER HANDLING.

PERSONAL PROTECTIVE EQUIPMENT:

RESPIRATORY:
IF VENTILATION IS NOT SUFFICIENT TO EFFECTIVELY PREVENT BUILDUP OF AEROSOLS OR VAPORS, APPROPRIATE NIOSH/MSHA RESPIRATORY PROTECTION MUST BE PROVIDED.

PERSONAL PROTECTIVE EQUIPMENT:

GENERAL: USE GOOD INDUSTRIAL HYGIENE PRACTICES IN HANDLING THIS MATERIAL.

SECTION 9 - PHYSICAL & CHEMICAL PROPERTIES

APPEARANCE: GLASS TUBES CONTAINING COLORLESS AND/OR COLORED SOLIDS.

ODOR: SLIGHTLY PUNGENT TO ODORLESS

PHYSICAL STATE: SOLID

pH: NOT AVAILABLE (STRONG ACIDIC REACTION)

VAPOR PRESSURE: NOT APPLICABLE

VAPOR DENSITY: NOT APPLICABLE

BOILING POINT: NOT APPLICABLE

MELTING POINT: NOT APPLICABLE

SOLUBILITY (H2O): NOT APPLICABLE

SPECIFIC GRAVITY: NOT APPLICABLE

SECTION 10 - CHEMICAL STABILITY & REACTIVITY INFORMATION

CHEMICAL STABILITY: STABLE UNDER NORMAL CONDITIONS.

CHEMICAL STABILITY:

CONDITIONS TO AVOID:
AVOID CONTACT WITH WATER. TUBE'S CONTENTS REACT WITH BASES. POSSIBILITY OF STRONG EXOTHERMIC REACTION TO WATER AND BASES. DO NOT STORE ABOVE 77 DEG. F (25 DEG. C).

INCOMPATIBILITY:
AVOID CONTACT WITH WATER. DO NOT MIX OTHER SUBSTANCES WITH THE CONTENTS OF TUBE.

HAZARDOUS DECOMPOSITION:
DECOMPOSITION OF THIS PRODUCT PRODUCES TOXIC SULFUR OXIDES, ACIDS AND SOLUTIONS OF IODINE AND MANGANESE COMPOUNDS AND DECOMPOSITION PRODUCTS OF THE COMPONENTS CITED IN SECTION 2.

HAZARDOUS POLYMERIZATION: HAZARDOUS POLYMERIZATION CAN OCCUR.

SECTION 11 - TOXICOLOGICAL INFORMATION

ACUTE AND CHRONIC TOXICITY:

A:

GENERAL PRODUCT INFORMATION:
COMPONENTS OF TUBES MAY EMIT TOXIC AND CHOKING VAPORS WHICH ARE MAY CAUSE SEVERE IRRITATION OR INJURY TO THE EYES, THROAT AND LUNGS. IF THE GLASS TUBE IS BROKEN, THE SHARP EDGES MAY CAUSE CUTS OR SCRAPES. SULFURIC ACID IS CORROSIVE TO THE EYES, SKIN, RESPIRATORY SYSTEM AND GASTROINTESTINAL TRACT. EXPOSURE TO SULFURIC ACID MAY LEAD TO DENTAL EROSION, BRONCHITIS, FIBROSIS, EMPHYSEMA AND PULMONARY EDEMA. EXPOSURE TO MISTS CONTAINING SULFURIC ACID HAVE BEEN IMPLICATED IN CAUSING CANCER IN HUMANS.

B:

COMPONENT ANALYSIS - LD50/LC50:

HYDRAZINE HYDRATE (7803-57-8):
ORAL LD50 RAT: 129 MG/KG
ORAL LD50 MOUSE: 83 MG/KG

SULFURIC ACID (7664-93-9):

INHALATION LC50 RAT: 510 MG/M3/2H
INHALATION LC50 MOUSE: 320 MG/M3/2H
ORAL LD50 RAT: 2140 MG/KG

PYRIDINE (110-86-1):

INHALATION LC50 RAT: 28500 MG/M3/1H
ORAL LD50 RAT: 891 MG/KG
ORAL LD50 MOUSE: 1500 MG/KG
DERMAL LD50 RABBIT: 1121 MG/KG

IODINE (7553-56-2):
ORAL LD50 RAT: 14 G/KG
ORAL LD50 MOUSE: 22 G/KG

XYLENE (1330-20-7):
INHALATION LC50 RAT: 5000 PPM/4H
ORAL LD50 RAT: 4300 MG/KG
DERMAL LD50 RABBIT: >1700 MG/KG

ACETIC ANHYDRIDE (108-24-7):
INHALATION LC50 RAT: 1000 PPM/4H
ORAL LD50 RAT: 1780 MG/KG
DERMAL LD50 RABBIT: 4 ML/KG

o-TOLUIDINE (95-53-4):
INHALATION LC50 RAT: 862 PPM/4H
ORAL LD50 RAT: 670 MG/KG
ORAL LD50 MOUSE: 520 MG/KG
DERMAL LD50 RABBIT: 3250 (MICRO)L/KG

HYDROCHLORIC ACID (7647-01-0):
INHALATION LC50 RAT: 3124 PPM/1H
INHALATION LC50 MOUSE: 1108 PPM/1H

N,N-DIETHYLANILINE (91-66-7):
INHALATION LC50 RAT: 1920 MG/M3/4H

POTASSIUM PERMANGANATE (7722-64-7):
ORAL LD50 RAT: 1090 MG/KG
ORAL LD50 MOUSE: 2157 MG/KG

FURFUROL (98-01-1):
INHALATION LC50 RAT: 175 MG/KG/6H
ORAL LD50 RAT: 65 MG/KG
ORAL LD50 MOUSE: 400 MG/KG

FORMALDEHYDE (50-00-0):
INHALATION LC50 MOUSE: 454 MG/M3/4H
ORAL LD50 RAT: 100 MG/KG
ORAL LD50 MOUSE: 42 MG/KG
DERMAL LD50 RABBIT: 270 (MICRO)L/KG

o-DIANISIDINE (119-90-4):
ORAL LD50 RAT: 1920 MG/KG

CARCINOGENICITY:

A:
GENERAL PRODUCT INFORMATION: NO INFORMATION AVAILABLE.

B:
COMPONENT CARCINOGENICITY:

SULFURIC ACID (7664-93-9):

ACGIH:
A2 - SUSPECTED HUMAN CARCINOGEN (CONTAINED IN STRONG INORGANIC ACID MISTS)

IARC: MONOGRAPH 54, 1992 (GROUP 1 (CARCINOGENIC TO HUMANS))

PYRIDINE (110-86-1):

ACGIH:
A3 - CONFIRMED ANIMAL CARCINOGEN WITH UNKNOWN RELEVANCE TO HUMANS

IARC: MONOGRAPH 77, 2000 (GROUP 3 (NOT CLASSIFIABLE))

CHROMIUM (VI) SALTS (NOT AVAILABLE):
NIOSH: POTENTIAL OCCUPATIONAL CARCINOGEN

XYLENE (1330-20-7):
ACGIH: A4 - NOT CLASSIFIABLE AS A HUMAN CARCINOGEN
IARC: MONOGRAPH 71, 1999; MONOGRAPH 47, 1989 (GROUP 3 (NOT CLASSIFIABLE))

o-TOLUIDINE (95-53-4):

ACGIH: A3 - CONFIRMED ANIMAL CARCINOGEN WITH UNKNOWN RELEVANCE TO HUMANS

NIOSH: POTENTIAL OCCUPATIONAL CARCINOGEN

NTP: REASONABLY ANTICIPATED TO BE A CARCINOGEN (POSSIBLE SELECT CARCINOGEN)

IARC: MONOGRAPH 77, 2000 (GROUP 2A (PROBABLY CARCENOGENIC TO HUMANS))

HYDROCHLORIC ACID (7647-01-0):
ACGIH: A4 - NOT CLASSIFIABLE AS A HUMAN CARCINOGEN
IARC: MONOGRAPH 54, 1992 (GROUP 3 (NOT CLASSIFIABLE))

FURFUROL (98-01-1):
ACGIH: A3 - CONFIRMED ANIMAL CARCINOGEN WITH UNKNOWN RELEVANCE TO HUMANS
IARC: MONOGRAPH 63, 1995 (GROUP 3 (NOT CLASSIFIABLE))

FORMALDEHYDE (50-00-0):
ACGIH: A2 - SUSPECTED HUMAN CARCINOGEN

OSHA:
0.75 PPM TWA; 2 PPM STEL; 0.5 PPM ACTION LEVEL (IRRITANT AND POTENTIAL CANCER HAZARD - SEE 29 CFR 1910.1048)

NIOSH: POTENTIAL OCCUPATIONAL CARCINOGEN

NTP: REASONABLY ANTICIPATED TO BE A CARCINOGEN (POSSIBLE SELECT CARCINOGEN)

IARC: MONOGRAPH 88, 2004 (GROUP 1 (CARCINOGENIC TO HUMANS))

o-DIANISIDINE (119-90-4):
NIOSH: POTENTIAL OCCUPATIONAL CARCINOGEN

NTP: REASONABLY ANTICIPATED TO BE A CARCINOGEN (POSSIBLE SELECT CARCINOGEN)

IARC:
SUPPLEMENT 7, 1987; MONOGRAPH 4, 1974 (GROUP 2B (POSSIBLY CARCINOGENIC TO HUMANS))

ZIRCONIUM (7440-67-7):
ACGIH: A4 - NOT CLASSIFIABLE AS A HUMAN CARCINOGEN

MUTAGENICITY:
CHROMIUM VI COMPOUNDS HAVE BEEN MUTAGENIC IN BACTERIA, CAUSED CHROMOSOME ABERRATIONS IN MAMMALIAN CELLS AND HAVE BEEN ASSOCIATED WITH INCREASED FREQUENCIES OF CHROMOSOME ABERRATIONS IN LYMPHOCYTES IN CHROMATE WORKERS.

TERATOGENICITY:
CHROMIUM VI COMPOUNDS HAVE CAUSED BIRTH DEFECTS AND AFFECTED FERTILITY IN LABORATORY ANIMALS.

SECTION 12 - ECOLOGICAL INFORMATION

ECOTOXICITY:

GENERAL PRODUCT INFORMATION:
BECAUSE OF THE LOW pH OF THIS PRODUCT, IT WOULD BE EXPECTED TO PRODUCE SIGNIFICANT ECOTOXICITY UPON EXPOSURE TO AQUATIC ORGANISMS AND AQUATIC SYSTEMS.

B:

COMPONENT ANALYSIS - ECOTOXICITY - AQUATIC TOXICITY:

PYRIDINE (110-86-1):

TEST & SPECIES		CONDITIONS
96 HR LC50 FATHEAD MINNOW	93.8 MG/L	FLOW-THROUGH
96 HR LC50 CARP	26.0 MG/L	
24 HR EC50 FRESHWATER ALGAE (TETRAHYMENA PYRIFORMIS)	520 MG/L	
48 HR LC50 WATER FLEA	520 MG/L	

XYLENE (1330-20-7):

TEST & SPECIES		CONDITIONS
96 HR LC50 FATHEAD MINNOW	13.4 MG/L	FLOW-THROUGH
96 HR LC50 RAINBOW TROUT	8.05 MG/L	FLOW-THROUGH
96 HR LC50 BLUEGILL	16.1 MG/L	FLOW-THROUGH
24 HR EC50 PHOTOBACTERIUM PHOSPHOREUM	0.0084 MG/L	
48 HR EC50 WATER FLEA	3.82 MG/L	

ACETIC ANHYDRIDE (108-24-7):

TEST & SPECIES		CONDITIONS
48 HR LC50 GOLDEN ORFE	265 MG/L	
24 HR EC50 WATER FLEA	55 MG/L	

o-TOLUIDINE (95-53-4):

TEST & SPECIES		CONDITIONS
30 MIN EC50 PHOTOBACTERIUM PHOSPHOREUM	13.2 MG/L	

HYDROCHLORIC ACID (7647-01-0):

TEST & SPECIES		CONDITIONS
48 HR LC50 BLUEGILL	3.6 MG/L	

N,N-DIETHYLANILINE (91-66-7):

TEST & SPECIES		CONDITIONS
96 HR LC50 FATHEAD MINNOW	16.4 MG/L	FLOW-THROUGH
5 MIN EC50 PHOTOBACTERIUM PHOSPHOREUM	6.50 MG/L	
15 MIN EC50 PHOTOBACTERIUM PHOSPHOREUM	7.70 MG/L	

POTASSIUM PERMANGANATE (7722-64-7):

TEST & SPECIES		CONDITIONS
96 HR LC50 GOLDFISH	3.6 MG/L	
24 HR LC50 STRIPED BASS	1.5 MG/L	STATIC

FURFUROL (98-01-1):

TEST & SPECIES		CONDITIONS
96 HR LC50 FATHEAD MINNOW	32 MG/L	
48 HR LC50 HARLEQUIN FISH	23 MG/L	
24 HR EC50 WATER FLEA	36 MG/L	

FORMALDEHYDE (50-00-0):

TEST & SPECIES		CONDITIONS
96 HR LC50 FATHEAD MINNOW	24.1 MG/L	FLOW-THROUGH
96 HR LC50 BLUEGILL	0.10 MG/L	FLOW-THROUGH
5 MIN EC50 PHOTOBACTERIUM PHOSPHOREUM	9.0 MG/L	
15 MIN EC50 PHOTOBACTERIUM PHOSPHOREUM	7.26 MG/L	
25 MIN EC50 PHOTOBACTERIUM PHOSPHOREUM	6.81 MG/L	
96 HR EC50 WATER FLEA	20 MG/L	

ENVIRONMENTAL FATE: NO INFORMATION AVAILABLE FOR THE PRODUCT.

SECTION 13 - DISPOSAL CONSIDERATIONS

US EPA WASTE NUMBER & DESCRIPTIONS:

A:

GENERAL PRODUCT INFORMATION:

IF DISCARDED, WASTES MAY BE CLASSIFIED AS:
D002, D003 (CORROSIVE, REACTIVE WASTE)

WASTES MUST BE TESTED USING METHODS DESCRIBED IN 40 CFR PART 261 TO DETERMINE IF IT MEETS APPLICABLE DEFINITIONS OF HAZARDOUS WASTES.

B:

COMPONENT WASTE NUMBERS:

PYRIDINE (110-86-1):

RCRA:
WASTE NUMBER U196
5.0 MG/L REGULATORY LEVEL

XYLENE (1330-20-7):
RCRA: WASTE NUMBER U239 (IGNITABLE WASTE, TOXIC WASTE)

o-TOLUIDINE (95-53-4):
RCRA: WASTE NUMBER U328

FURFUROL (98-01-1):
RCRA: WASTE NUMBER U125 (IGNITABLE WASTE)

FORMALDEHYDE (50-00-0):
RCRA: WASTE NUMBER U122

o-DIANISIDINE (119-90-4):
RCRA: WASTE NUMBER U091

DISPOSAL INSTRUCTIONS:
PRIOR TO DISPOSAL, CAREFULLY DILUTE TUBE CONTENTS WITH WATER. ADD BAKING SODA TO NEUTRALIZE ACIDITY. DO NOT ALLOW THIS MATERIAL TO DRAIN INTO SEWERS/WATER SUPPLIES. WASTE MUST BE HANDLED IN ACCORDANCE WITH ALL FEDERAL, STATE, PROVINCIAL, AND LOCAL REGULATIONS.

SECTION 14 - TRANSPORTATION INFORMATION

INTERNATIONAL TRANSPORTATION REGULATIONS:
THIS PRODUCT IS NON-HAZARDOUS AS DEFINED BY TRANSPORT REGULATIONS.

SECTION 15 - REGULATORY INFORMATION

US FEDERAL REGULATIONS:

A:

GENERAL PRODUCT INFORMATION:
COMPONENTS OF THIS PRODUCT HAVE BEEN CHECKED AGAINST THE NON-CONFIDENTIAL TSCA INVENTORY BY CAS REGISTRY NUMBER. COMPONENTS NOT IDENTIFIED ON THIS NON-CONFIDENTIAL INVENTORY ARE EXEMPT FROM LISTING (I.E. AS POLYMERS) OR ARE LISTED ON THE CONFIDENTIAL INVENTORY AS DECLARED BY THE SUPPLIER.

B:

COMPONENT ANALYSIS:
THIS MATERIAL CONTAINS ONE OR MORE OF THE FOLLOWING CHEMICALS REQUIRED TO BE IDENTIFIED UNDER SARA SECTION 302 (40 CFR 355 APPENDIX A), SARA SECTION 313 (40 CFR 372.65) AND/OR CERCLA (40 CFR 302.4).

SULFURIC ACID (7664-93-9):

SARA 302: 1000 LB TPQ

SARA 313:
1.0 % DE MINIMIS CONCENTRATION (ACID AEROSOLS INCLUDING MISTS, VAPORS, FOG, AND OTHER AIRBORNE FORMS OF ANY PARTICLE SIZE)

CERCLA: 1000 LB FINAL RQ; 454 KG FINAL RQ

PYRIDINE (110-86-1):
SARA 313: 1.0 % DE MINIMIS CONCENTRATION
CERCLA: 1000 LB FINAL RQ; 454 KG FINAL RQ

XYLENE (1330-20-7):
CERCLA: 100 LB FINAL RQ; 45.4 KG FINAL RQ

ACETIC ANHYDRIDE (108-24-7):
CERCLA: 5000 LB FINAL RQ; 2270 KG FINAL RQ

o-TOLUIDINE (95-53-4):
SARA 313: 0.1 % DE MINIMIS CONCENTRATION
CERCLA: 100 LB FINAL RQ; 45.4 KG FINAL RQ

HYDROCHLORIC ACID (7647-01-0):
SARA 302: 500 LB TPQ
CERCLA: 5000 LB FINAL RQ; 2270 KG FINAL RQ

N,N-DIETHYLANILINE (91-66-7):
CERCLA: 1000 LB FINAL RQ; 454 KG FINAL RQ

POTASSIUM PERMANGANATE (7722-64-7):
CERCLA: 100 LB FINAL RQ; 45.4 KG FINAL RQ

FURFUROL (98-01-1):
CERCLA: 5000 LB FINAL RQ; 2270 KG FINAL RQ

FORMALDEHYDE (50-00-0):
SARA 302: 500 LB TPQ
CERCLA: 100 LB FINAL RQ; 45.4 KG FINAL RQ

o-DIANISIDINE (119-90-4):
CERCLA: 100 LB FINAL RQ; 45.4 KG FINAL RQ

STATE REGULATIONS:

A:

GENERAL PRODUCT INFORMATION:
OTHER STATE REGULATIONS MAY APPLY. CHECK INDIVIDUAL STATE REQUIREMENTS.

B:

COMPONENT ANALYSIS - STATE:
THE FOLLOWING COMPONENTS APPEAR ON ONE OR MORE OF THE FOLLOWING STATE HAZARDOUS SUBSTANCES LISTS:

COMPONENT	CAS	CA	MA	MN	NJ	PA	RI
HYDRAZINE HYDRATE	7803-57-8	NO	NO	NO	YES	NO	NO
SULFURIC ACID	7664-93-9	YES	YES	YES	YES	YES	YES
PYRIDINE	110-86-1	YES	YES	YES	YES	YES	YES
IODINE	7553-56-2	YES	YES	YES	YES	YES	YES
XYLENE	1330-20-7	YES	YES	YES	YES	YES	YES
ACETIC ANHYDRIDE	108-24-7	YES	YES	YES	YES	YES	YES
o-TOLUIDINE	95-53-4	YES	YES	YES	YES	YES	YES
HYDROCHLORIC ACID	7647-01-0	YES	YES	YES	YES	YES	YES
N,N-DIETHYLANILINE	91-66-7	NO	YES	NO	YES	YES	NO
POTASSIUM PERMANGANATE	7722-64-7	YES	YES	NO	YES	YES	YES
FURFUROL	98-01-1	YES	YES	YES	YES	YES	YES
FORMALDEHYDE	50-00-0	YES	YES	YES	YES	YES	YES
o-DIANISIDINE	119-90-4	YES	YES	YES	YES	YES	YES
MAGNESIUM PERCHLORATE	10034-81-8	NO	YES	NO	YES	YES	YES
ZIRCONIUM	7440-67-7	YES	YES	YES	YES	YES	YES

THE FOLLOWING STATEMENT(S) ARE PROVIDED UNDER THE CALIFORNIA SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT OF 1986 (PROPOSITION 65):

WARNING!

THIS PRODUCT CONTAINS A CHEMICAL KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER.

COMPONENT ANALYSIS - WHMIS IDL:

THE FOLLOWING COMPONENTS ARE IDENTIFIED UNDER THE CANADIAN HAZARDOUS PRODUCTS ACT INGREDIENT DISCLOSURE LIST:

COMPONENT	CAS #	MINIMUM CONCENTRATION
SULFURIC ACID	7664-93-9	1 % (ENGLISH ITEM 1485, FRENCH ITEM 138)
PYRIDINE	110-86-1	1 % (ENGLISH ITEM 1374, FRENCH ITEM 1459)
IODINE	7553-56-2	1 % (ENGLISH ITEM 875, FRENCH ITEM 1020)
o-TOLUIDINE	95-53-4	0.1 % (ENGLISH ITEM 1589, FRENCH ITEM 1633)

ADDITIONAL REGULATORY INFORMATION:

A:
GENERAL PRODUCT INFORMATION: NO ADDITIONAL INFORMATION AVAILABLE.

B:

COMPONENT ANALYSIS - INVENTORY:

COMPONENT	CAS #	TSCA	CAN	EEC
HYDRAZINE HYDRATE	7803-57-8	NO	NO	NO
SULFURIC ACID	7664-93-9	YES	DSL	EINECS
PYRIDINE	110-86-1	YES	DSL	EINECS
IODINE	7553-56-2	YES	DSL	EINECS
XYLENE	1330-20-7	YES	DSL	EINECS
ACETIC ANHYDRIDE	108-24-7	YES	DSL	EINECS
o-TOLUIDINE	95-53-4	YES	DSL	EINECS
HYDROCHLORIC ACID	7647-01-0	YES	DSL	EINECS
N,N-DIETHYLANILINE	91-66-7	YES	DSL	EINECS
POTASSIUM PERMANGANATE	7722-64-7	YES	DSL	EINECS
CERIUM SULFATE	10294-42-5	NO	NO	NO
FURFUROL	98-01-1	YES	DSL	EINECS
FORMALDEHYDE	50-00-0	YES	DSL	EINECS
2,4-DINITROPHENYLHYDRAZINE	119-26-6	YES	DSL	EINECS
o-DIANISIDINE	119-90-4	YES	DSL	EINECS
IODINE PENTOXIDE	12029-98-0	YES	DSL	EINECS
MAGNESIUM PERCHLORATE	10034-81-8	YES	DSL	EINECS
BARIUMCHLOROANILATE	13435-46-6	YES	DSL	EINECS
PYRIDYLPYRIDINIUM CHLORIDE	22752-98-3	NO	NO	EINECS
BUTYRYLCHOLINIODIDE	2494-56-6	YES	NDSL	EINECS
ZIRCONIUM	7440-67-7	YES	DSL	EINECS

SECTION 16 - OTHER INFORMATION

OTHER INFORMATION:
REASONABLE CARE HAS BEEN TAKEN IN THE PREPARATION OF THIS INFORMATION, BUT THE MANUFACTURER MAKES NO WARRANTY OF MERCHANTABILITY OR ANY OTHER WARRANTY, EXPRESSED OR IMPLIED, WITH RESPECT TO THIS INFORMATION. THE MANUFACTURER MAKES NO REPRESENTATIONS AND ASSUMES NO LIABILITY FOR ANY DIRECT, INCIDENTIAL OR CONSEQUENTIAL DAMAGES RESULTING FROM ITS USE.

KEY/LEGEND:

ACGIH = AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGIENISTS.

CERCLA = COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION AND LIABILITY ACT.

CFR = CODE OF FEDERAL REGULATIONS.

EINECS = EUROPEAN INVENTORY OF EXISTING COMMERCIAL CHEMICAL SUBSTANCES.

EPA = ENVIRONMENTAL PROTECTION AGENCY.

HEPA = HIGH EFFICIENCY PARTICULATE AIR.

HMIS = HAZARDOUS MATERIAL INFORMATION SYSTEM.

IARC = INTERNATIONAL AGENCY FOR RESEARCH ON CANCER.

= NATIONAL FIRE PROTECTION ASSOCIATION.

NIOSH = NATIONAL INSTITUTE OF OCCUPATIONAL SAFETY AND HEALTH.

NJTSR = NEW JERSEY TRADE SECRET REGISTRY.

NTP = NATIONAL TOXICOLOGY PROGRAM.

OSHA = OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION.

NA = NOT AVAILABLE OR NOT APPLICABLE.

SARA = SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT.

TLV = THRESHOLD LIMIT VALUE.

TSCA = TOXIC SUBSTANCE CONTROL ACT.

CONTACT: PRODUCT MANAGER

CONTACT PHONE: 412-787-8383