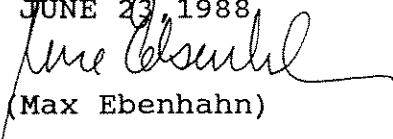


MATERIAL SAFETY DATA SHEET

Product Number: 042018
Product Description: ONLINE MONOVALENT CATION AND MORPHOLINE
ELUANT CONCENTRATE (5X CONCENTRATE OF
20mM HCl/.06 mM DAP.HCL/40 mM H3B03)

Dionex Corporation
1228 Titan Way
P.O. Box 3603
Sunnyvale, California
94088-3603

Emergency Phone: (408) 737-0700
Information Phone: (408) 737-0700
Date Prepared: JUNE 23, 1988
Prepared By:


(Max Ebenhahn)

The following information is believed to be accurate and is currently the best information available to us. However, we make no warranties, express or implied, with respect to the information supplied and we assume no liability resulting from its use.

HAZARDOUS INGREDIENTS/IDENTITY INFORMATION (Section II)

HAZARDOUS COMPONENTS	PERCENT SOLUTION	CAS NO.
Hydrochloric Acid (HCl)	0.117	7647-01-0
DL-2,3-Diaminopropionic acid monohydrochloride (DAP.HCl)	0.0042	54897-59-5
Boric Acid (H3B03)	1.24	10043-35-3

PHYSICAL/CHEMICAL CHARACTERISTICS (Section III)

APPEARANCE AND ODOR: Clear colorless solution

pH: Approximately pH 1-2

FIRE AND EXPLOSION HAZARD DATA (Section IV)

FLASH POINT (METHOD USED): N/A
(Note solution is approximately 98% water)

FLAMMABLE LIMITS:
LEL: Undetermined
UEL: Undetermined

EXTINGUISHING MEDIA:
* Carbon Dioxide, Foam, Dry Chemical

SPECIAL FIRE FIGHTING PROCEDURES:
* As a general rule, firefighters subject to products of combustion should wear full-protective clothing including self-contained breathing apparatus.

UNUSUAL FIRE AND EXPLOSION HAZARDS:
* Decomposition products of dissolved components include Carbon Monoxide, Carbon Dioxide, Nitrogen Oxide and Hydrogen Chloride Gas.

REACTIVITY DATA (Section V)

STABILITY
UNSTABLE:
STABLE: X
CONDITIONS TO AVOID:

INCOMPATIBILITY (MATERIALS TO AVOID):
* DAP.HCL is incompatible with strong oxidizing agents
* HCl is incompatible with strong bases
* Pure boric acid is incompatible with acetic anhydride (explosive reaction upon heating), potassium (violent or explosive reaction upon impact) and iron (may be corrosive).

HAZARDOUS DECOMPOSITION OR BY-PRODUCTS:
* Decomposition products of dissolved components include Carbon Monoxide, Carbon Dioxide, Nitrogen Oxide and Hydrogen Chloride Gas.

HAZARDOUS POLYMERIZATION:
MAY OCCUR:
WILL NOT OCCUR: X
CONDITIONS TO AVOID:

HEALTH HAZARD DATA (Section VI)

HAZARD CLASS: Corrosive

ROUTES OF ENTRY

INHALATION?: X
SKIN?: X
INGESTION?: X

HEALTH HAZARDS (ACUTE AND CHRONIC):

- * May be harmful by inhalation, ingestion or skin absorption.
- * Causes eye and skin irritation
- * Irritating to mucous membranes and upper respiratory tract.
- * Toxicity Hazards (1)

HYDROCHLORIC ACID

RTECS NO: MW4025000

HYDROCHLORIC ACID

IRRITATION DATA

EYE-RBT 100 MG RNS MLD TXCYAC 23,281,82

TOXICITY DATA

IHL-HMN LCLO:1300 PPM/30M	29ZWAE -,207,68
IHL-HMN LCLO:3000 PPM/5M	TABIA2 3,231,33
UNR-MAN LDLO:81 MG/KG	85DCAI 2,73,70
IHL-RAT LC50:3124 PPM/1H	AMRL** TR-74-78,74
IHL-MUS LC50:1180 PPM/1H	JCTODH 3,61,76
IPR-MUS LD50:1449 MG/KG	COREAF 256,1043,63
ORL-RBT LD50:900 MG/KG	BIZEA2 134,437,23

REVIEWS, STANDARDS AND REGULATIONS

OSHA STANDARD-AIR: CL 5 PPM

FEREAC 39,23540,70

EPA GENETIC TOXICOLOGY PROGRAM, JANUARY 1984

REPORTED IN EPA TSCA INVENTORY, 1983

EPA TSCA SECTION 8(E) STATUS REPORT 8EHQ-0578-0146

MEETS CRITERIA FOR PROPOSED OSHA MEDICAL RECORDS

RULE

FEREAC 47,30420,82

DL-2,3-DIAMINOPROPIONIC ACID MONOHYDROCHLORIDE

TOXICOLOGICAL PROPERTIES HAVE NOT BEEN THOROUGHLY
INVESTIGATED.

BORIC ACID

TOXICITY DATA

SKN-HMN: 15MG/3D-I MLD	85DKA8 - ,127,77
MMO-ESC: 17000 PPM/24H	AMNTA4 85,119,51
SPM-RAT-ORL: 6MG/KG	EVHPAZ 13,69,76
ORL-RAT TDLo: 45 GM/KG	TXAPA9 23,351,72
(90 MALE)	
ORL-RAT TDLo: 45 GM/KG	TXAPA9 23,351,72
(90D PRE)	
ORL-DOG TDLo: 45500 MG/KG	TXAPA9 23,351,72
(25W MALE)	
ORL-HMN LDLo: 214 MG/KG	FAPOA 29,881,73
ORL-INF LDLo: 934 MG/KG	JAMAAP 90,382,28
SKN-INF LDLo: 1200 MG/KG	JAMAAP 129,332,45
SKN-CHD LDLo: 4 GM/KG/4D	MMWOAU 52,763,05
SKN-MAN LDLo: 2430 MG/KG	JAMAAP 128,266,45
SKN-CHD LDLo: 1500 MG/KG	QJPPAL 6,714,33
SCU-INF LDLo: 1100 MG/KG	MDSR** No. 2,50
UNK-MAN TDLo: 170 MG/KG:GIT	RTPCAT 1,472,29
UNK-MAN LDLo: 174 MG/KG	85DCAI 2,73,70
ORL-RAT LDLo: 2660 MG/KG	JAMAAP 128,266,45
SCU-RAT LD50: 1400 MG/KG	14KTAK - ,694,64
IVN-RAT LD50: 1330 MG/KG	MDSR** No. 2,50
ORL-MUS LD50: 3450 MG/KG	JAMAAP 128,266,45
SCU-MUS LD50: 1740 MG/KG	JAMAAP 128,266,45
IVN-MUS LD50: 1780 MG/KG	MDSR** No. 2,50
ORL-DOG LDLo: 1780 MG/KG	JAMAAP 128,266,45
SCU-DOG LDLo: 1000 MG/KG	JAMAAP 128,266,45
PAR-DOG LDLo: 1 GM/KG	RTPCAT 1,472,29
ORL-RBT LDLo: 4000 MG/KG	MDSR** No. 2,50
SCU-RBT LDLo: 150 MG/KG	HBAMAK 4,1289,35
PAR RBT LDLo: 670 MG/KG	RTPCAT 1,472,29
ORL-GPG LDLo: 1 GM/KG	RAMAAB 46,1493,32
SCU-GPG LD50: 1200 MG/KG	MDSR** No. 2,50

TOXICOLOGY REVIEW

CLCHAU 19,361,73

FNSCA6 2,67,73

CURRENTLY TESTED BY NTP FOR CARCINOGENESIS BY
STANDARD BIOASSAY PROTOCOL AS OF JULY 1982.

REPORTED IN EPA TSCA INVENTORY, 1980.

MEETS CRITERIA FOR PROPOSED OSHA MEDICAL RECORDS
RULE FEREAC 47,30420,82

reference #1 DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS

By N. Irving Sax

6th Edition

Van Nostrand Reinhold Company, Inc.

CARCINOGENICITY:

NTP?: Unknown
IARC MONOGRAPHS?: Unknown
OSHA REGULATED?: Unknown

SYMPTOMS AND SIGNS OF EXPOSURE:

- * HCl is destructive to tissue of the mucous membranes and the upper respiratory tract, eyes and skin.
- * Inhalation of HCl may cause serious inflammations and edema of the larynx and bronchi, chemical pneumonitis and pulmonary edema.
- * Additional symptoms of HCl exposure include burning sensations, coughing, wheezing, laryngitis, shortness of breath, headache, nausea and vomiting.
- * DAP.HCl is an irritant which will cause soreness and irritation of mucous membranes.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE: Unknown

EMERGENCY AND FIRST AID PROCEDURES:

- * In case of contact, wash skin with soap and copious amounts of water.
- * Flush eyes with copious amounts of water for at least 15 minutes.
- * If inhaled remove to fresh air. If not breathing give artificial respiration. If breathing is difficult give oxygen.
- * Submit to medical examination.

PRECAUTIONS FOR SAFE HANDLING AND USE (Section VII)

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:

- * Wear appropriate protective clothing and eye protection.
- * If the spill is large, wear a self-contained breathing apparatus.
- * Sweep up and store in a suitable waste container.
- * Wash contaminated areas with soap and water.

WASTE DISPOSAL METHOD:

- * Neutralize (Sodium Bicarbonate is effective) and then incinerate according to local, state and federal laws.

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING:

- * Work in an area with adequate ventilation.

CONTROL MEASURES (Section VII)

RESPIRATORY PROTECTION (SPECIFY TYPE)

- * For large amounts where HCl vapors might be a problem, wear an OSHA approved respirator with an acid prefilter.

VENTILATION

LOCAL EXHAUST: Good laboratory ventilation is acceptable.

MECHANICAL (GENERAL):

SPECIAL:

OTHER:

PROTECTIVE GLOVES: disposable laboratory gloves are adequate.

EYE PROTECTION: Glasses or goggles.

OTHER PROTECTIVE CLOTHING OR EQUIPMENT: Labcoats