



Curtin Matheson Scientific, Inc.
9999 VETERANS MEMORIAL
DOCK A
HOUSTON, TX 77038

FISONS

MATERIAL SAFETY DATA SHEET

MAIL TO: SCHOOLCRAFT COLLEGE
ATTN: F FEENSTRA A9-520
HPS MEMBER
18600 HAGGERTY RD.

LIVONIA, MI 48152-2696

SECTION 1 - NAME AND PRODUCT

MANUFACTURER NAME AND ADDRESS MALLINCKRODT PARIS BY PASS PARIS, KY 40361 EMERGENCY PHONE 314-982-5000	CHEMICAL NUMBER:
	ITEM NUMBER: 0831443
	VNDR CATLG NBR: M200-14
	ENTRY DATE: 07-25-89
	CHANGE DATE: 08-12-92
	SPECIAL REQUEST
COMMON NAME (ON LABEL) NITRIC ACID, 70%	CHEMICAL FAMILY N/G
TRADE NAME & SYNONYMS AQUA FORTIS; AZOTIC ACID; NITRIC ACID 70%	CHEMICAL FORMULA HNO3

SECTION 2 - HAZARDOUS INGREDIENTS

HAZARDOUS COMPONENT	CAS	% (WT)	TLV	PEL
NITRIC ACID	7697-37-2	.00	.000 SEC.5	.000 SEC.5

PEL: Permissible Exposure Limit established by the Occupational Safety and Health Administration (OSHA).
TLV: Threshold Limit Value established by the American Conference of Governmental Industrial Hygienists, 1986-87.

OTHER INGREDIENT INFORMATION
MOLECULAR WEIGHT: 63.00

SECTION 3 - PHYSICAL DATA

BOILING POINT 122C (252F)	VOLATILE BY VOLUME (%) N/G	VAPOR PRESSURE 62 @ 2
MELTING POINT -34C (-29F)	VAPOR DENSITY 2-3 AP	SOLUBILITY IN WATER INFINITE IN WATER.
EVAPORATION RATE (NO INFORMATION FOUND = 1) N/G	SPECIFIC GRAVITY 1.41	
APPEARANCE AND ODOR CLEAR, COLORLESS TO SLIGHTLY YELLOW LIQUID.		

OTHER PHYSICAL DATA
NO OTHER PHYSICAL DATA GIVEN.

SECTION 4 - FIRE AND EXPLOSION DATA

FLASH POINT

N/G

LOWER EXPLOSIVE LIMIT

N/G

UPPER EXPLOSIVE LIMIT

N/G

EXTINGUISHING MEDIA

IF INVOLVED IN A FIRE, USE WATER SPRAY.

UNUSUAL FIRE AND EXPLOSION HAZARDS

REACTS EXPLOSIVELY WITH COMBUSTIBLE ORGANIC OR READILY OXIDIZABLE MATERIALS SUCH AS: ALCOHOLS, TURPENTINE, CHARCOAL, ORGANIC REFUSE, METAL POWDER, HYDROGEN SULFIDE, ETC.

SPECIAL FIRE FIGHTING PROCEDURES

INCREASES THE FLAMMABILITY OF COMBUSTIBLE, ORGANIC AND READILY OXIDIZABLE MATERIALS. IN THE EVENT OF A FIRE, WEAR FULL PROTECTIVE CLOTHING AND NIOSH-APPROVED SELF-CONTAINED BREATHING APPARATUS WITH FULL FACEPIECE OPERATED IN THE PRESSURE DEMAND OR OTHER POSITIVE PRESSURE MODE.

SECTION 5 - HEALTH HAZARD DATA

HEALTH HAZARDS (ACUTE & CHRONIC)

N/A

PRIMARY ROUTES OF EXPOSURE

INHALATION, INGESTION, SKIN CONTACT, EYE CONTACT.

SIGNS AND SYMPTOMS OF EXPOSURE

INHALATION: CORROSIVE. INHALATION OF VAPORS CAN CAUSE BREATHING DIFFICULTIES AND LEAD TO PNEUMONIA AND PULMONARY EDEMA, WHICH MAY BE FATAL. OTHER SYMPTOMS MAY INCLUDE COUGHING, CHOKING, AND IRRITATION OF THE NOSE, THROAT, AND

RESPIRATORY TRACT. INGESTION:

CORROSIVE. SWALLOWING NITRIC ACID CAN CAUSE IMMEDIATE PAIN AND BURNS OF THE MOUTH, THROAT,

ESOPHAGUS AND GASTROINTESTINAL TRACT. SKIN CONTACT:

CORROSIVE. CAN CAUSE REDNESS, PAIN, AND SEVERE SKIN BURNS. CONCENTRATED SOLUTIONS CAUSE DEEP ULCERS

AND STAIN SKIN A YELLOW OR YELLOW-BROWN COLOR. EYE CONTACT: CORROSIVE. VAPORS ARE IRRITATING AND MAY CAUSE DAMAGE TO THE

SECTION 5 - HEALTH HAZARD DATA (CONTINUED)

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

PERSONS WITH PRE-EXISTING SKIN DISORDERS OR EYE DISEASE MAY BE MORE SUSCEPTIBLE TO THE EFFECTS OF THIS SUBSTANCE.

CARCINOGENICITY

INDICATORS NOT GIVEN

NTP Yes No

IARC Yes No

OSHA Yes No

NO INDICATORS GIVEN.

EMERGENCY AND FIRST AID PROCEDURES

IN CASE OF CONTACT, IMMEDIATELY FLUSH SKIN OR EYES WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES. IF SWALLOWED, DO NOT INDUCE VOMITING. GIVE LARGE QUANTITIES OF WATER OR MILK IF AVAILABLE. NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON. IF INHALED, REMOVE TO FRESH AIR. IF NOT BREATHING, GIVE ARTIFICIAL RESPIRATION. IF BREATHING IS DIFFICULT, GIVE OXYGEN. IN ALL CASES CALL A PHYSICIAN. SEE SECTION 5.
DOT HAZARD CLASS: OXIDIZER

THRESHOLD LIMITS / TOXICITY DATA

AIRBORNE EXPOSURE LIMITS: -OSHA PERMISSIBLE
EXPOSURE LIMIT (PEL): 2 PPM (TWA)
-ACGIH THRESHOLD LIMIT VALUE (TLV):
2 PPM (TWA); 4PPM (STEL)

SECTION 6 - REACTIVITY DATA

STABILITY Unstable Stable

CONDITIONS TO AVOID

STABLE UNDER ORDINARY CONDITIONS OF USE AND STORAGE. CONTAINERS MAY BURST WHEN HEATED.

INCOMPATIBILITY (MATERIALS TO AVOID)

A DANGEROUSLY POWERFUL OXIDIZING AGENT, CONCENTRATED NITRIC ACID IS INCOMPATIBLE WITH MOST SUBSTANCES, ESPECIALLY STRONG BASES, METALLIC POWDERS, CARBIDES, HYDROGEN SULFIDE, TURPENTINE, AND COMBUSTIBLE ORGANICS.

SECTION 6 - REACTIVITY DATA (CONTINUED)**HAZARDOUS DECOMPOSITION OR BYPRODUCTS**

WHEN HEATED TO DECOMPOSITION, EMITS TOXIC NITROGEN OXIDES FUMES AND HYDROGEN NITRATE.
WILL REACT WITH WATER OR STEAM TO PRODUCE HEAT AND TOXIC AND CORROSIVE FUMES.

HAZARDOUS POLYMERIZATION May Occur Will Not Occur
CONDITIONS TO AVOID
N/A

SECTION 7 - SPILL, LEAK, AND DISPOSAL PROCEDURES**STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED**

ISOLATE OR ENCLOSE THE AREA OF THE LEAK OR SPILL. CLEAN-UP PERSONNEL SHOULD WEAR PROTECTIVE CLOTHING AND RESPIRATORY EQUIPMENT SUITABLE FOR TOXIC OR CORROSIVE FLUIDS OR VAPORS. SMALL SPILLS: FLUSH WITH WATER AND NEUTRALIZE WITH ALKALINE MATERIAL (SODA ASH, LIME, ETC.). SEWER WITH EXCESS WATER. LARGER SPILLS AND LOT SIZES: NEUTRALIZE WITH ALKALINE MATERIAL, PICK UP WITH ABSORBENT MATERIAL (SAND, EARTH, VERMICULITE) AND DISPOSE IN A RCRA-APPROVED WASTE FACILITY OR SEWER THE NEUTRALIZED SLURRY WITH EXCESS WATER IF LOCAL ORDINANCES ALLOW. PROVIDE FORCED VENTILATION TO DISSIPATE FUMES. REPORTABLE QUANTITY (RQ) (CWA/CERCLA): 1000 LBS.
ENSURE COMPLIANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS.

WASTE DISPOSAL METHOD
SEE SECTION ABOVE

SECTION 8 - SPECIAL PROTECTION INFORMATION**RESPIRATORY PROTECTION**

PERSONAL RESPIRATORS: (NIOSH APPROVED) IF THE TLV IS EXCEEDED, WEAR A SUPPLIED AIR, FULL-FACEPIECE RESPIRATOR, AIRLINED HOOD, OR SELF-CONTAINED BREATHING APPARATUS. NITRIC ACID IS AN OXIDIZER AND SHOULD NOT COME IN CONTACT WITH CARTRIDGES AND CANNISTERS THAT CONTAIN OXIDIZABLE MATERIALS, SUCH AS ACTIVATED CHARCOAL.

LOCAL VENTILATION

SEE OTHER VENT.

MECHANICAL VENTILATION

SEE OTHER VENT.

SPECIAL VENTILATION

SEE OTHER

SECTION 8 - SPECIAL PROTECTION INFORMATION (CONTINUED)

OTHER VENTILATION

VENTILATION SYSTEM: A SYSTEM OF LOCAL AND/OR GENERAL EXHAUST IS RECOMMENDED TO KEEP EMPLOYEE EXPOSURES BELOW THE AIRBORNE EXPOSURE LIMITS. LOCAL EXHAUST VENTILATION IS GENERALLY PREFERRED BECAUSE IT CAN CONTROL THE EMISSIONS OF THE CONTAMINANT AT ITS SOURCE, PREVENTING DISPERSION OF IT INTO THE GENERAL WORK AREA. PLEASE REFER TO THE ACGIH DOCUMENT, "INDUSTRIAL VENTILATION, A MANUAL OF RECOMMENDED PRACTICES", MOST RECENT EDITION, FOR DETAILS.

PROTECTIVE GLOVES

SEE OTHER

EYE PROTECTION

SEE OTHER

OTHER PROTECTIVE CLOTHING OR EQUIPMENT

SKIN PROTECTION: WEAR IMPERVIOUS PROTECTIVE CLOTHING, INCLUDING BOOTS, GLOVES, LAB COAT, APRON OR COVERALLS TO PREVENT SKIN CONTACT.
EYE PROTECTION:
USE CHEMICAL SAFETY GOGGLES AND/OR A FULL FACE SHIELD WHERE SPLASHING IS POSSIBLE. CONTACT LENSES SHOULD NOT BE WORN WHEN WORKING WITH THIS MATERIAL. MAINTAIN EYE WASH FOUNTAIN AND QUICK-DRENCH FACILITIES IN WORK AREA.

SECTION 9 - SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE

KEEP IN A TIGHTLY CLOSED CONTAINER, STORED IN A COOL, DRY, VENTILATED AREA. PROTECT FROM PHYSICAL DAMAGE AND DIRECT SUNLIGHT. ISOLATE FROM INCOMPATIBLE SUBSTANCES. PROTECT FROM MOISTURE.
PRECAUTIONARY MEASURES DANGER. STRONG OXIDIZER. CONTACT WITH OTHER MATERIAL MAY CAUSE FIRE. CORROSIVE. LIQUID AND MIST CAUSE SEVERE BURNS TO ALL BODY TISSUE. MAY BE FATAL IF SWALLOWED. HARMFUL IF INHALED. INHALATION MAY CAUSE LUNG DAMAGE. DO NOT GET IN EYES, ON SKIN, OR ON CLOTHING. AVOID BREATHING MIST. USE ONLY WITH ADEQUATE VENTILATION. WASH THOROUGHLY AFTER HANDLING. KEEP FROM CONTACT WITH CLOTHING AND OTHER COMBUSTIBLE MATERIALS. DO NOT STORE NEAR COMBUSTIBLE MATERIALS. STORE IN A TIGHTLY CLOSED CONTAINER. REMOVE AND WASH CONTAMINATED CLOTHING PROMPTLY. THIS SUBSTANCE IS CLASSIFIED AS A POISON UNDER THE FEDERAL CAUSTIC POISON ACT.

SECTION 10 - OTHER INFORMATION

MISCELLANEOUS INFO.

NFPA RATINGS: HEALTH: 3 FLAMMABILITY: 0 REACTIVITY: 0 OTHER: OXIDIZER N/A = NOT APPLICABLE. N/G = NOT GIVEN.

SIGNS & SYMPTOMS OF EXPOSURE (CONTINUED): SKIN CONTACT:

CORROSIVE. CAN CAUSE REDNESS, PAIN, AND SEVERE SKIN BURNS. CONCENTRATED SOLUTIONS CAUSE DEEP ULCERS AND STAIN SKIN A YELLOW OR YELLOW-BROWN COLOR. EYE CONTACT: CORROSIVE. VAPORS ARE IRRITATING AND MAY CAUSE DAMAGE TO THE EYES. SPLASHES MAY CAUSE SEVERE BURNS AND PERMANENT EYE DAMAGE. CHRONIC EXPOSURE: LONG-TERM EXPOSURE TO CONCENTRATED VAPORS MAY CAUSE EROSION OF TEETH. LONG TERM EXPOSURES SELDOM OCCUR DUE TO THE CORROSIVE PROPERTIES OF THIS SUBSTANCE.

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