

~~Hydrochloric Acid~~

SECTION 01 IDENTIFICATION

FURNISHED BY..... PPG INDUSTRIES, INC. - CHEMICALS GROUP

RESS..... ONE GATEWAY CENTER, PITTSBURGH, PA. 15222

DATE EFFECTIVE..... OCTOBER, 1979

CHEMICAL NAME/SYNONYMS... HYDROCHLORIC ACID

CHEMICAL FAMILY..... ACIDS

EMERGENCY PHONE #..... 304-843-1300 - 24 HOUR EMERGENCY ASSISTANCE

PRODUCT OR TRADE NAME.... MURIATIC ACID '18 DEG, 20 DEG, AND 22 DEG BE'

CAS #..... 7647-01-0

CHEMICAL FORMULA..... HCl

PPG MSDS # 75A

SECTION 02 PHYSICAL DATA

BOILING POINT..... @ 760 MM HG...185

% VOLATILE BY VOLUME..... 100

MELTING POINT..... /FREEZING POINT...NOT APPLICABLE

VAPOR PRESSURE..... @ 20 DEG C...18 DEG BE'/14 MMHG **

VAPOR DENSITY/AIR IS 1... NOT APPLICABLE

SOLUBILITY IN WATER..... 'WEIGHT % IN WATER'...INFINITE

APPEARANCE & COLOR..... CLEAR, WATER WHITE TO SLIGHTLY YELLOW LIQUID***

SPECIFIC GRAVITY..... 'H2O IS 1'...18 DEG BE'/1.1417 20 DEG BE'/1.1600*

EVAPORATION RATE..... NOT APPLICABLE

*22 DEG BE'/1.1789

PH OF SOLUTIONS...NOT APPLICABLE.

BULK DENSITY...NOT APPLICABLE.

*20 DEG BE'/24 MMHG 22 DEG BE'/100 MMHG

H OF SOLUTION...UNKNOWN.

*PUNGENT AND IRRITATING ODOR.

SECTION 03 FIRE AND EXPLOSION HAZARD DATA

FLASH POINT..... DEG F 'METHOD USED'...NONE

FLAMMABLE LIMITS IN AIR '% BY VOLUME'...

NONE

LEL UEL

EXTINGUISHING MEDIA... NOT APPLICABLE

SPECIAL FIRE FIGHTING PROCEDURES...

FUR FIRES INVOLVING MURIATIC ACID, FIRE FIGHTERS SHOULD WEAR NIOSH/MSHA-APPROVED PRESSURE-DEMAND, SELF-CONTAINED BREATHING APPARATUS TO AVOID POSSIBLE EXPOSURE TO HCl VAPORS.

UNUSUAL FIRE AND EXPLOSION HAZARDS...

HYDROCHLORIC ACID WILL ATTACK MOST METALS WITH EVOLUTION OF POTENTIALLY EXPLOSIVE HYDROGEN.

3 . 1 . HEALTH 3, FLAMMABILITY 0, REACTIVITY 1, SPECIAL

SECTION 04 REACTIVITY DATA

STABILITY...

STABLE.

CONDITIONS TO AVOID...CONTACT WITH METALS.

HAZARDOUS POLYMERIZATION...

WILL NOT OCCUR.

CONDITIONS TO AVOID...NONE.

INCOMPATIBILITY 'MATERIALS TO AVOID'...

METALS, STRONG ALKALI.

HAZARDOUS DECOMPOSITION PRODUCTS...

HYDROGEN WILL BE FORMED IF ACID COMES IN CONTACT WITH METALS.

SECTION 05 SPILL, LEAK AND DISPOSAL PROCEDURES

STEPS TO BE TAKEN IF MATERIAL IS SPILLED OR RELEASED...

REMOVE UNPROTECTED PERSONNEL FROM AREA OF SPILL. ONLY PERSONNEL EQUIPPED WITH PROPER RESPIRATORY AND SKIN AND EYE PROTECTION SHOULD BE ALLOWED IN AREA. NEUTRALIZE SPILLED MATERIAL BY SLOWLY AND CAREFULLY COVERING THE SPILL WITH SODA ASH 'SODIUM CARBONATE'. THEN FLUSH AWAY THE RESULTANT MIXTURE WITH COPIOUS AMOUNTS OF WATER.

WASTE DISPOSAL METHOD...

CARE MUST BE TAKEN WHEN USING OR DISPOSING OF CHEMICAL MATERIALS AND/OR THEIR CONTAINERS TO PREVENT ENVIRONMENTAL CONTAMINATION. IT IS YOUR DUTY TO DISPOSE OF THE CHEMICAL MATERIALS AND/OR THEIR CONTAINERS IN ACCORDANCE WITH THE CLEAN AIR ACT, THE RESOURCE CONSERVATION AND RECOVERY ACT, AS WELL AS ANY RELEVANT STATE OF LOCAL LAWS/REGULATIONS REGARDING DISPOSAL.

SECTION 06 HEALTH HAZARD DATA

PERMISSIBLE EXPOSURE LIMITS 'TLV'...

5PPM '7MG/M3' CEILING-OSHA 29CFR 1910.1000-MAY 28, 1975

TOXICITY DATA '1'

CLASSIFICATION 'POISON, IRRITANT, ETC.'

LC50 INHALATION-RAT-3124PPM 'ONE HOUR'

INHALATION...EXTREMELY IRRITATING

LD50 DERMAL-NOT AVAILABLE

SKIN/EYE...CORROSIVE

LD50 INGESTION-RABBIT-900MG/KG

INGESTION...CORROSIVE

FISH, LC50 'LETHAL CONCENTRATION'-UNKNOWN

EFFECTS OF OVEREXPOSURE '2' '3'

ACUTE...MURIATIC ACID IS CORROSIVE TO EYES AND SKIN. EYE OR SKIN CONTACT WITH LIQUID CAUSES SEVERE BURNS AND CAN RESULT IN BLINDNESS EVEN AFTER A SHORT EXPOSURE TO SMALL AMOUNTS.

MURIATIC ACID MISTS OR HCl VAPOR ARE SEVERELY IRRITATING TO THE RESPIRATORY TRACT AND MUCOUS MEMBRANES. INHALATION OF SUFFICIENTLY HIGH CONCENTRATIONS MAY RESULT IN LARYNGEAL SPASMS, LARYNGEAL EDEMA, OR RAPIDLY DEVELOPING PULMONARY EDEMA. MISTS MAY ALSO CAUSE BLEEDING OF THE NOSE AND GUMS, ULCERATION OF THE NASAL AND ORAL MUCOSA AND SEVERE SKIN AND EYE IRRITATION. INGESTION OF MURIATIC ACID CAUSES SEVERE BURNS OF THE DIGESTIVE TRACT BECAUSE OF ITS CORROSIVE NATURE AND MAY BE FATAL.

CHRONIC...NO KNOWN EFFECTS OTHER THAN THOSE OUTLINED ABOVE.

SECTION 07 FIRST AID PROCEDURES AND PHYSICIAN NOTES

FIRST AID PROCEDURES...

INHALATION...REMOVE TO FRESH AIR. IF NOT BREATHING, GIVE ARTIFICIAL RESPIRATION, PREFERABLY MOUTH-TO-MOUTH. IF BREATHING IS DIFFICULT, GIVE OXYGEN. CALL A PHYSICIAN.

SECTION 07 FIRST AID PROCEDURES AND PHYSICIAN NOTES

EYE OR SKIN CONTACT...IMMEDIATELY FLUSH EYES AND SKIN WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES WHILE REMOVING CONTAMINATED CLOTHING AND SHOES. CALL A PHYSICIAN. THOROUGHLY CLEAN CONTAMINATED CLOTHING AND SHOES BEFORE REUSE OR DISCARD.
INGESTION...GIVE MILK AND/OR A QUART OF WATER TO DRINK. DO NOT INDUCE VOMITING. TAKE IMMEDIATELY TO A HOSPITAL.

NOTES TO PHYSICIAN *INCLUDING ANTIDOTES*...

INHALATION EXPOSURE SHOULD BE TREATED SYMPTOMATICALLY AND SUPPORTIVELY. IN CASE OF SKIN CONTAMINATION, A MILD ALKALINE SOLUTION MAY BE USED TO NEUTRALIZE ACID. IN CASE OF EYE CONTAMINATION, IRRIGATE WITH WATER OR NORMAL SALINE UNTIL PH RETURNS TO PHYSIOLOGICAL VALUES FOR THE EYE. AVOID USE OF TOPICAL STEROIDS AND/OR ANESTHETICS. IF INGESTION OCCURS, AVOID USE OF CARBONATES AND BICARBONATES AS THEY RELEASE CO2, WHICH MAY CAUSE GASTRIC TENSION AND/OR RUPTURE. NEUTRALIZATION OF INGESTED ACID MAY BE ACCOMPLISHED BY USING ALUMINUM HYDROXIDE GEL OR MILK OF MAGNESIA. AVOID USE OF ASPIRIN. SUBSEQUENTLY, TREATMENT SHOULD BE SYMPTOMATIC AND SUPPORTIVE.

SECTION 08 SPECIAL HANDLING INFORMATION

SPECIAL PROTECTION INFORMATION...
RESPIRATORY PROTECTION...USE NIOSH/MSHA-APPROVED RESPIRATORY PROTECTION FOR MISTS AND ACID GASES. RESPIRATORY PROTECTION PROGRAM MUST BE IN ACCORDANCE WITH 29CFR 1910.134.
VENTILATION *TYPE*...LOCAL EXHAUST...SUFFICIENT TO MAINTAIN WORKPLACE CONCENTRATION BELOW PERMISSIBLE EXPOSURE LIMIT.
EYE PROTECTION...SPLASH-PROOF GOGGLES AND FACE SHIELD.
GLOVES...RUBBER OR NEUPRENE.
OTHER PROTECTIVE EQUIPMENT...RUBBER APRON, RUBBER BOOTS., EYE-WASH FOUNTAIN AND SAFETY SHOWER IN IMMEDIATE AREA. PERSONNEL PROTECTION PROGRAM AND USE OF EQUIPMENT MUST BE IN ACCORDANCE WITH 29CFR 1910.133.

SECTION 09 SPECIAL PRECAUTIONS AND ADDITIONAL INFORMATION

SPECIAL PRECAUTIONS...
PRECAUTIONS TO BE TAKEN DURING HANDLING AND STORING...
WHEN HANDLING, WEAR SPLASHPROOF GOGGLES AND FACE SHIELD, RUBBER GLOVES, RUBBER BOOTS, RUBBER APRON, LONG-SLEEVED SHIRT, AND PLASTIC HARD HAT. WEAR NIOSH/MSHA-APPROVED RESPIRATORY PROTECTION IN ANY EVENT WHERE MIST OR VAPOR MAY BE GENERATED ABOVE OSHA PERMISSIBLE EXPOSURE LIMITS '5PPM., 7MG/M3 - CEILING'.
PREVENT ACID FROM CONTACTING STRONG ALKALIES OR METALS.

OTHER PRECAUTIONS...

DO NOT GET IN EYES, ON SKIN, OR ON CLOTHING.
CAN CAUSE SEVERE INJURY OR BLINDNESS.
AVOID BREATHING MIST OR VAPOR.
USE ONLY WITH VENTILATION SUFFICIENT TO LIMIT EMPLOYEE EXPOSURE AT OR BELOW OSHA PERMISSIBLE LIMIT '5PPM., 7MG/M3-CEILING'.
DO NOT TAKE INTERNALLY.
WASH THOROUGHLY AFTER HANDLING.
SHIPPING NAME...HYDROCHLORIC ACID.
HAZARD CLASS...CORROSIVE MATERIAL.

SECTION 10 HAZARDOUS INGREDIENTS

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HAZARDOUS INGREDIENTS	%	HAZARD DATA
HYDROCHLORIC ACID, 18 DEG, 20 DEG, OR 22 DEG BE° '27.9, 31.5, OR 35.2% HCl'	100	SEE SECTIONS 5 & 6

SECTION 99 FOOTNOTES

- 1. NIOSH REGISTRY OF TOXIC EFFECTS OF CHEMICAL SUBSTANCES, 1977
- 2. INDUSTRIAL HYGIENE AND TOXICOLOGY, VOLUME II, SECOND EDITION, F.A. PATTY, 1963
- 3. DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS, FOURTH EDITION, N.I. SAX, 1975