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M A T E R I A L S A F E T Y D A T A S H E E T

SECTION 1. ----- CHEMICAL IDENTIFICATION-----

NAME: PERCHLORIC ACID, 60%, A.C.S. REAGENT

SECTION 2. ----- COMPOSITION/INFORMATION ON

INGREDIENTS -----

CAS #: 7601-90-3

MF: HCLO4

EC NO: 231-512-4

SECTION 3. ----- HAZARDS IDENTIFICATION -----

LABEL PRECAUTIONARY STATEMENTS

OXIDIZING

CORROSIVE

HEATING MAY CAUSE AN EXPLOSION.

CONTACT WITH COMBUSTIBLE MATERIAL MAY CAUSE FIRE.

CAUSES SEVERE BURNS.

HARMFUL IF SWALLOWED.

KEEP AWAY FROM COMBUSTIBLE MATERIAL.

IN CASE OF ACCIDENT OR IF YOU FEEL UNWELL, SEEK

MEDICAL ADVICE

IMMEDIATELY (SHOW THE LABEL WHERE POSSIBLE).

IN CASE OF CONTACT WITH EYES, RINSE IMMEDIATELY WITH

PLENTY OF

WATER AND SEEK MEDICAL ADVICE.

WEAR SUITABLE PROTECTIVE CLOTHING, GLOVES AND

EYE/FACE

PROTECTION.

DO NOT BREATHE VAPOR.

SECTION 4. ----- FIRST-AID MEASURES-----

IF SWALLOWED, WASH OUT MOUTH WITH WATER PROVIDED

PERSON IS CONSCIOUS.

CALL A PHYSICIAN.

IF INHALED, REMOVE TO FRESH AIR. IF BREATHING BECOMES

DIFFICULT,

CALL A PHYSICIAN.

IN CASE OF SKIN CONTACT, FLUSH WITH COPIOUS AMOUNTS

OF WATER

FOR AT LEAST 15 MINUTES. REMOVE CONTAMINATED

CLOTHING AND

SHOES. CALL A PHYSICIAN.
IN CASE OF CONTACT WITH EYES, FLUSH WITH COPIOUS
AMOUNTS OF WATER
FOR AT LEAST 15 MINUTES. ASSURE ADEQUATE FLUSHING BY
SEPARATING

THE EYELIDS WITH FINGERS. CALL A PHYSICIAN.
SECTION 5. ----- FIRE FIGHTING MEASURES -----
EXTINGUISHING MEDIA

CARBON DIOXIDE, DRY CHEMICAL POWDER OR
APPROPRIATE FOAM.
SPECIAL FIREFIGHTING PROCEDURES
WEAR SELF-CONTAINED BREATHING APPARATUS AND
PROTECTIVE CLOTHING TO

PREVENT CONTACT WITH SKIN AND EYES.
UNUSUAL FIRE AND EXPLOSIONS HAZARDS
EMITS TOXIC FUMES UNDER FIRE CONDITIONS.
CONTACT WITH OTHER MATERIAL MAY CAUSE FIRE.
MAY ACCELERATE COMBUSTION.

SECTION 6. ----- ACCIDENTAL RELEASE MEASURES-----

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CONTAINERS FOR
DISPOSAL.

VENTILATE AREA AND WASH SPILL SITE AFTER MATERIAL
PICKUP IS COMPLETE.

EVACUATE AREA.
WEAR SELF-CONTAINED BREATHING APPARATUS, RUBBER
BOOTS AND HEAVY
RUBBER GLOVES.

SECTION 7. ----- HANDLING AND STORAGE-----
REFER TO SECTION 8.

SECTION 8. ----- EXPOSURE CONTROLS/PERSONAL
PROTECTION-----

DO NOT BREATHE VAPOR.
DO NOT GET IN EYES, ON SKIN, ON CLOTHING.
AVOID PROLONGED OR REPEATED EXPOSURE.
KEEP AWAY FROM COMBUSTIBLE MATERIALS, HEAT,
SPARKS, AND OPEN FLAME.

KEEP TIGHTLY CLOSED.
STORE IN A COOL DRY PLACE.
USE ONLY IN A CHEMICAL FUME HOOD.
SAFETY SHOWER AND EYE BATH.
NIOSH/MSHA-APPROVED RESPIRATOR.
COMPATIBLE CHEMICAL-RESISTANT GLOVES.
CHEMICAL SAFETY GOGGLES.
WASH THOROUGHLY AFTER HANDLING.

REMOVE AND WASH CONTAMINATED CLOTHING PROMPTLY.
SECTION 9. - - - - - PHYSICAL AND CHEMICAL PROPERTIES - - -

- - - -

APPEARANCE AND ODOR
COLORLESS LIQUID
PHYSICAL PROPERTIES
FLASHPOINT NONE
VAPOR PRESSURE: 7MM 25 C
SPECIFIC GRAVITY: 1.535
SWISS POISON CLASS: 1

SECTION 10. - - - - - STABILITY AND REACTIVITY - - - - -

STABILITY
STABLE.

CONDITIONS TO AVOID

ALTHOUGH 68-72% COLD PERCHLORIC ACID BEHAVES AS A
STRONG BUT NON-
OXIDIZING ACID, IT BECOMES AN EXTREME OXIDANT AND
POWERFUL DEHYDRATOR
AT ELEVATED TEMPERATURES (>160°C) OR WHEN
ANHYDROUS. IT MAY BE FAIRLY
READILY DEHYDRATED TO THE ANHYDROUS ACID, E.G.
STRONG CONCENTRATED
ACIDS (SULFURIC, OLEUM, FUMING NITRIC), INORGANIC
ANHYDRIDES (SULFUR
TRIOXIDE AND DIOXIDE, PHOSPHOROUS PENTOXIDE,
THIONYL CHLORIDE ETC.),
ORGANIC ANHYDRIDES AND HALOGENS. CONTACT WITH
ALCOHOLS, GLYCOLS OR
POLYHYDROXY COMPOUNDS PRODUCE EXPLOSIVE
COMPOUNDS. CONTACT WITH WOOD,
CELLULOSE AND ITS DERIVATIVES (PAPER, CARDBOARD,
ETC.) CAN PRODUCE
VIOLENT EXPLOSIONS. ATTEMPTS TO DISSOLVE BISMUTH OR
ITS ALLOYS IN HOT
PERCHLORIC ACID CARRIES A VERY HIGH RISK OF AN
EXPLOSION OCCURRING.
CONTACT WITH SULFOXIDES OR ETHERS MAY PRODUCE
EXPLOSIONS. THE
CRYSTALLINE SALT OBTAINED BY THE ACTION OF
PHOSPHINE ON 68%
PERCHLORIC ACID AT -20°C IS DANGEROUSLY EXPLOSIVE,
SENSITIVE TO MOIST
AIR, INCREASE IN TEMPERATURE, OR FRICTION AND CANNOT
BE DRIED.
VIOLENT REACTIONS WITH TRICHLORETHYLENE, SODIUM
PHOSPHINATE, ZINC

PHOSPHIDE, ORGANOPHOSPHOROUS COMPOUNDS AND
UNSATURATED ORGANICS HAVE
OCCURRED ON HEATING WITH PERCHLORIC ACID.
INCOMPATIBILITIES
ORGANIC MATERIALS
FINELY POWDERED METALS
HAZARDOUS COMBUSTION OR DECOMPOSITION PRODUCTS
CARBON MONOXIDE, CARBON DIOXIDE
HAZARDOUS POLYMERIZATION
WILL NOT OCCUR.

SECTION 11. ----- TOXICOLOGICAL INFORMATION -----

ACUTE EFFECTS
MATERIAL IS EXTREMELY DESTRUCTIVE TO TISSUE OF THE
MUCOUS MEMBRANES
AND UPPER RESPIRATORY TRACT, EYES AND SKIN.
INHALATION MAY RESULT IN SPASM, INFLAMMATION AND
EDEMA OF THE
LARYNX AND BRONCHI, CHEMICAL PNEUMONITIS AND
PULMONARY EDEMA.
SYMPTOMS OF EXPOSURE MAY INCLUDE BURNING
SENSATION, COUGHING,
WHEEZING, LARYNGITIS, SHORTNESS OF BREATH,
HEADACHE, NAUSEA AND
VOMITING.
TO THE BEST OF OUR KNOWLEDGE, THE CHEMICAL,
PHYSICAL, AND
TOXICOLOGICAL PROPERTIES HAVE NOT BEEN THOROUGHLY
INVESTIGATED.
MAY CAUSE SKIN IRRITATION.
MAY BE HARMFUL IF ABSORBED THROUGH THE SKIN.
MAY CAUSE EYE IRRITATION.
MAY BE HARMFUL IF INHALED.
MATERIAL MAY BE IRRITATING TO MUCOUS MEMBRANES
AND UPPER
RESPIRATORY TRACT.
MAY BE HARMFUL IF SWALLOWED.
RTECS #: SC7500000
PERCHLORIC ACID
TOXICITY DATA
ORL-RAT LD50:1100 MG/KG GTPZAB 17(8),33,1973
SCU-MUS LD50:250 MG/KG GTPZAB 17(8),33,1973
ORL-DOG LD50:400 MG/KG GTPZAB 17(8),33,1973
TARGET ORGAN DATA
BEHAVIORAL (EXCITEMENT)
LUNGS, THORAX OR RESPIRATION (DYSPPNAE)

NUTRITIONAL AND GROSS METABOLIC (BODY TEMPERATURE
DECREASE)

ONLY SELECTED REGISTRY OF TOXIC EFFECTS OF CHEMICAL
SUBSTANCES

(RTECS) DATA IS PRESENTED HERE. SEE ACTUAL ENTRY IN
RTECS FOR

COMPLETE INFORMATION.

SECTION 12. ----- ECOLOGICAL INFORMATION -----
DATA NOT YET AVAILABLE.

SECTION 13. ----- DISPOSAL CONSIDERATIONS -----
CONTACT A LICENSED PROFESSIONAL WASTE DISPOSAL
SERVICE TO DISPOSE OF
THIS MATERIAL.

OBSERVE ALL FEDERAL, STATE AND LOCAL
ENVIRONMENTAL REGULATIONS.

SECTION 14. ----- TRANSPORT INFORMATION -----
CONTACT ALDRICH CHEMICAL COMPANY FOR
TRANSPORTATION INFORMATION.

SECTION 15. ----- REGULATORY INFORMATION -----

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EUROPEAN INFORMATION

EC INDEX NO: 017-006-00-4

OXIDIZING

CORROSIVE

R 5

HEATING MAY CAUSE AN EXPLOSION.

R 8

CONTACT WITH COMBUSTIBLE MATERIAL MAY CAUSE FIRE.

R 35

CAUSES SEVERE BURNS.

S 26

PLENTY OF
WATER AND SEEK MEDICAL ADVICE.

S 36/37/39

EYE/FACE
WEAR SUITABLE PROTECTIVE CLOTHING, GLOVES AND
PROTECTION.

S 45

MEDICAL ADVICE
IN CASE OF ACCIDENT OR IF YOU FEEL UNWELL, SEEK

IMMEDIATELY (SHOW THE LABEL WHERE POSSIBLE).
REVIEWS, STANDARDS, AND REGULATIONS

OEL=MAK

OEL-POLAND: MAC(TWA) 1 MG/M3, MAC(STEL) 3 MG/M3,

JAN1999

NOHS 1974: HZD 80182; NIS 34; TNF 2227; NOS 13; TNE 7468
NOES 1983: HZD 80182; NIS 27; TNF 1514; NOS 24; TNE 27220; TFE

11531

EPA TSCA SECTION 8(B) CHEMICAL INVENTORY
EPA TSCA TEST SUBMISSION (TSCATS) DATA BASE, JANUARY

2001

SECTION 16. ----- OTHER INFORMATION-----

THE ABOVE INFORMATION IS BELIEVED TO BE CORRECT BUT
DOES NOT PURPORT TO
BE ALL INCLUSIVE AND SHALL BE USED ONLY AS A GUIDE.