

NOSB NATIONAL LIST FILE CHECKLIST

LIVESTOCK

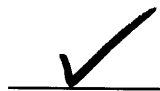
MATERIAL NAME: Iodine

CATEGORY: Synthetic Allowed

Complete?: 3/22



NOSB Database Form



References



MSDS (or equivalent)



Date file mailed out: 9/22/94



TAP Reviews from: Richard Krenzel
William Zimmer



Supplemental Information:

MISSING INFORMATION: _____

NOSB/NATIONAL LIST COMMENT FORM/BALLOT

Use this page to write down comments and questions regarding the data presented in the file of this National List material. Also record your planned opinion/vote to save time at the meeting on the National List.

Name of Material IODINE

Type of Use: Crops; Livestock; Processing

TAP Review by:

1. Richard Krenzel
2. William Zimmer
3.

Comments/Questions:

My Opinion/Vote is:

Signature _____ Date _____

USDA/TAP REVIEWER COMMENT FORM

Use this page or an equivalent to write down comments and summarize your evaluation regarding the data presented in the file of this potential National List material. Attach additional sheets if you wish.

This file is due back to us within 30 days of: Sept 22

Name of Material: IODINE

Reviewer Name: William A. Zimmer DVM

Is this substance Natural or Synthetic? Explain (if appropriate)

Synthetic, Only natural source with appreciable available iodine levels is kelp. Suggest listing kelp as a preferred natural feed source of iodine.

Please comment on the accuracy of the information in the file:

Accurate.

This material should be added to the National List as:

Synthetic Allowed Prohibited Natural

or, This material does not belong on the National List because:

Are there any restrictions or limitations that should be placed on this material by use or application on the National List?

Synthetic forms in feeds as listed levels of NRC only. Kelp as an acceptable natural source.

Any additional comments or references?

Many teat dips and topical antiseptics contain iodine formulations. This area of products should also be addressed with relative risk of milk supply contamination in the case of teat dips. Topical iodine preparations are highly effective, low contaminant risk.

Signature William A. Zimmer DVM Date 3/12/95

USDA/TAP REVIEWER COMMENT FORM

Use this page or an equivalent to write down comments and summarize your evaluation regarding the data presented in the file of this potential National List material. Attach additional sheets if you wish.

This file is due back to us within 30 days of: Sept 22

Name of Material: IODINE

Reviewer Name: Richard Krenzel

Is this substance Natural or Synthetic? Explain (if appropriate)

Synthetic

Please comment on the accuracy of the information in the file:

All correct

This material should be added to the National List as:

Synthetic Allowed Prohibited Natural

or, This material does not belong on the National List because:

Are there any restrictions or limitations that should be placed on this material by use or application on the National List?

Any additional comments or references?

Signature Richard Krenzel

Date 10/19/94

NOSB Materials Database

3.

Identification

Common Name **Iodine** **Chemical Name**
Other Names
Code #: CAS 7553-56-2 **Code #: Other** NIOSH #: NN1575000
N. L. Category Synthetic Allowed

Chemistry

Composition I **Family**
Properties Violet Black crystals, metallic luster, characteristic odor. Boiling point 184 C, melting point 114 C, specific gravity 4.93. Negligible solubility.
How Made Synthetic, although kelp is a natural source.

Use/Action

Type of Use Livestock
Use(s) feed additive. Forms approved by FDA: calcium iodate, calcium idobehenate, cuprous iodide, 3,5-diodosaliclic acid, ethylenediamine dihydroiodide (EDDI), Potassium iodate, potassium iodide, sodium iodate, sodium iodide, thymol iodide. iodized salt not less than 0.007%.
Can be used in topical teat dips.

Action

Combinations

Status

OFPA 2118 (c) (1) (B)(i) synthetic on exemption list as mineral.
N. L. Restriction Category 3- review by TAP before National List

EPA, FDA, etc FDA: GRAS for nutritional purposes.

Registration

Directions

Safety Guidelines Poison Danger, causes severe irritation, do not get in eyes, on skin.

State Differences

Historical status

International status

NOSB Materials Database

4.

OFPA Criteria

2119(m)1:chem. inter.

2119(m)2: toxicity

2119(m)3:manufacture

2119(m)4:humans LD50(Oral - Rat)(G/Kg) - 14, LD50(Oral - Mouse)(G/Kg) - 22. No report of carcinogenicity. Inhalation and ingestion are harmful and may be fatal. Highly corrosive.

2119(m)5: biology

2119(m)6:alternatives

2119(m)7:compatible

References

see attached sheet.

IODINE REFERENCES

AU: Akerib,-M

TI: Iodine toxic to young animals. [Chickens]

SO: Worlds-Poultry-Sci-J, Jan/Mar 1971, 27 (1): 35-37.

CN: DNAL 47.8-W89

AU: Anke,-M.; Groppe,-B.; Krause,-U.; Angelow,-L.; Arnhold,-W.; Masaoka,-T.; Barhoum,-S.; Zervas,-G.
 TI: Normal manganese, zinc, copper, iron, iodine, molybdenum, nickel, arsenic, lithium and cadmium supply dependent on the geological origin of the site and its effects on the status of these elements in wild and domestic ruminants.

SO: Trace elements in man and animals 6 / edited by Lucille S. Hurley, ... [et al.]. New York : Plenum Press, c1988. p. 663-665.

CN: DNAL QP534.I5-1987

AU: Chambon,-C.; Chastin,-I.

TI: Animal studies of iodized oils: iodine disposition and physiological effects.

SO: NATO-ASI-Ser-Ser-A-Life-Sci. New York, N.Y. : Plenum Press. 1993. v. 241 p. 159-167.

CN: DNAL QH301.N32

AU: McHargue,-J.S.; Young,-D.W.; Calfee,-R.K.

TI: The effect of certain fertilizer materials on the iodine content of important foods.

SO: J-Am-Soc-Agron. Madison, Wis. : American Society of Agronomy. July 1935. v. 27 (7) p. 559-565.

CN: DNAL 4-AM34P

AB: Crude Chile nitrate, raw rock phosphate, and limestone rocks may contain enough iodine to influence the iodine content of forage crops and vegetables when applied in adequate amounts to soils deficient in iodine. 2. Plants may absorb relatively large amounts of iodine without producing any signs of toxicity. 3. It is a simple matter to increase the iodine content of forage crops and vegetables by adding appropriate amounts of potassium iodine to the soil in which they are grown. 4. Tests by dialyses and the separation of various protein fractions of a sample of corn that contained a relatively large amount of iodine showed that this element was present in organic combinations and therefore in suitable form for assimilation by livestock and man.

AU: Underwood,-E.J.

TI: Trace metals in human and animal health.

SO: J-Hum-Nutr. London, E. Smith-Gordon. Feb 1981. v. 35 (1) p. 37-48. map, charts.

CN: 389.8-N959

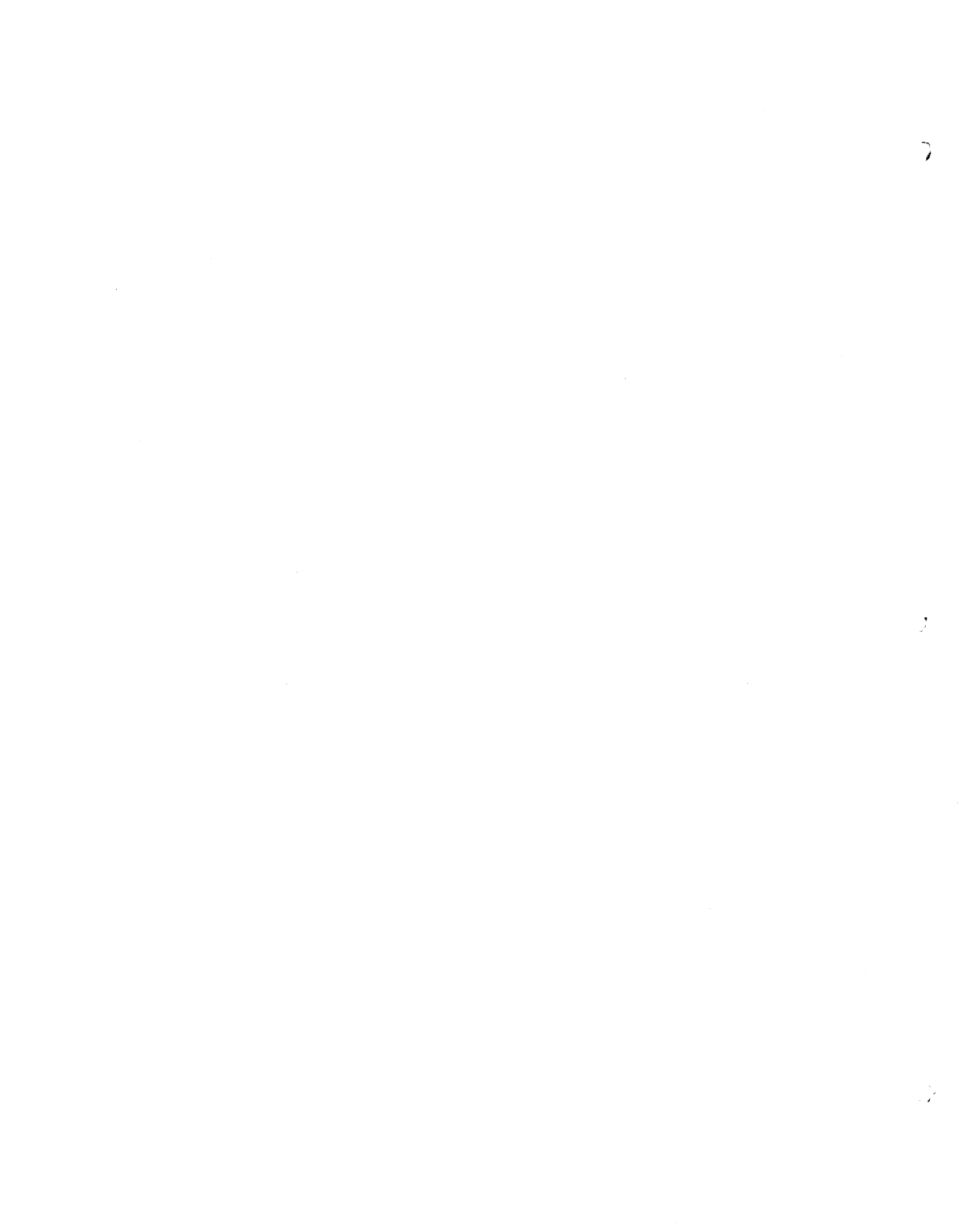
AB: Abstract: The recognition that trace elements are important in human nutrition dates back to the ancient Greeks, but scientific work really began in the 19th century with the discovery of such phenomena as copper in pigmented compounds, the inverse relationship of goiter and occurrence of iodine, and low blood iron in anemic women. Great strides were made during the 1930's, exemplified by the identification of cobalt as the cure for a disease of cattle in Australia, which was found to have significance in many other parts of the world. Copper, manganese, and zinc were soon added to the list of essential elements. Molybdenum and selenium followed in the 1950's. Chromium was found to be associated with glucose intolerance in children suffering from protein-energy malnutrition. These elements, among others, have been extensively studied to reveal the associated metalloenzymes and their functions, the metabolism in cells and tissues, the manifestations of deficiency, amounts needed for health, interactions, and possible toxicity.

AU: Vidor,-G.I.

TI: Iodine toxicity in man and animals Includes iodine content of food, feed and medication.

SO: Nutritional disorders. Miloslav Rechcigl, editor-in-chief. West Palm Beach, CRC Press, 1978. v. 1 p. 219-282. ill.

CN: DNAL RC620.A1N83



1 - PRODUCT IDENTIFICATION

PRODUCT NAME: IODINE
FORMULA: I
CAS NO.: 7553-56-2
PRODUCT CODES: 5189,5479,2211,2212,2208
EFFECTIVE: 09/03/86
FORMULA WT: 126.90
NIOSH/RTECS NO.: NN1575000
REVISION #02

PRECAUTIONARY LABELLING BAKER SAF-T-DATA(TM) SYSTEM

HEALTH - 3 SEVERE (POISON)
FLAMMABILITY - 0 NONE
REACTIVITY - 2 MODERATE
CONTACT - 3 SEVERE (CORROSIVE)

HAZARD RATINGS ARE 0 TO 4 (0 = NO HAZARD; 4 = EXTREME HAZARD).

LABORATORY PROTECTIVE EQUIPMENT
GOGGLES; LAB COAT; VENT HOOD; PROPER GLOVES

PRECAUTIONARY LABEL STATEMENTS

POISON DANGER MAY BE FATAL IF SWALLOWED OR INHALED
CAUSES SEVERE IRRITATION DO NOT GET IN EYES, ON SKIN, ON CLOTHING.
AVOID BREATHING DUST. KEEP IN TIGHTLY CLOSED CONTAINER. USE WITH ADEQUATE
VENTILATION. WASH THOROUGHLY AFTER HANDLING.

SAF-T-DATA(TM) STORAGE COLOR CODE: WHITE (CORROSIVE)

2 - HAZARDOUS COMPONENTS

COMPONENT	%	CAS NO.
IODINE	90-100	7553-56-2

3 - PHYSICAL DATA

BOILING POINT: 184 C (363 F) VAPOR PRESSURE(MM HG): 0.31
MELTING POINT: 114 C (237 F) VAPOR DENSITY(AIR=1): 9.0
SPECIFIC GRAVITY: 4.93 EVAPORATION RATE: N/A
(H2O=1) (BUTYL ACETATE=1)

SOLUBILITY(H2O): NEGLIGIBLE (LESS THAN 0.1 %) % VOLATILES BY VOLUME: 100
APPEARANCE & ODOR: VIOLET BLACK CRYSTALS, METALLIC LUSTER,
CHARACTERISTIC ODOR.

4 - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (CLOSED CUP) N/A

FLAMMABLE LIMITS: UPPER - N/A % LOWER - N/A %

FIRE EXTINGUISHING MEDIA

USE EXTINGUISHING MEDIA APPROPRIATE FOR SURROUNDING FIRE.

SPECIAL FIRE-FIGHTING PROCEDURES

FIREFIGHTERS SHOULD WEAR PROPER PROTECTIVE EQUIPMENT AND SELF-CONTAINED BREATHING APPARATUS WITH FULL FACEPIECE OPERATED IN POSITIVE PRESSURE MODE.

UNUSUAL FIRE & EXPLOSION HAZARDS

5 - HEALTH HAZARD DATA

PEL AND TLV LISTED DENOTE CEILING LIMIT.

THRESHOLD LIMIT VALUE (TLV/TWA): 1.0 MG/M3 (0.1 PPM)

PERMISSIBLE EXPOSURE LIMIT (PEL): 1 MG/M3 (0.1 PPM)

TOXICITY: LD50 (ORAL-RAT)(G/KG) - 14

LD50 (ORAL-MOUSE)(G/KG) - 22

CARCINOGENICITY: NTP: NO IARC: NO Z LIST: NO OSHA REG: NO

EFFECTS OF OVEREXPOSURE

INHALATION AND INGESTION ARE HARMFUL AND MAY BE FATAL.

VAPORS MAY BE IRRITATING TO SKIN, EYES, AND MUCOUS MEMBRANES.

INHALATION OF VAPORS MAY CAUSE SEVERE IRRITATION OR BURNS OF THE RESPIRATORY SYSTEM, PULMONARY EDEMA, OR LUNG INFLAMMATION.

CONTACT WITH SKIN OR EYES MAY CAUSE SEVERE IRRITATION OR BURNS.

PROLONGED EYE CONTACT MAY CAUSE PERMANENT DAMAGE TO THE CORNEA AND BLINDNESS MAY OCCUR.

INGESTION MAY CAUSE IRRITATION AND BURNING TO MOUTH AND THROAT, GASTRO-INTESTINAL PAIN, NAUSEA, VOMITING, FEVER, SHOCK, BLOOD IN URINE, AND DIFFICULTY BREATHING. CHRONIC EFFECTS OF OVEREXPOSURE MAY INCLUDE DAMAGE TO LUNGS, THYROID GLAND, AND BLOOD.

TARGET ORGANS

RESPIRATORY SYSTEM, EYES, SKIN, CENTRAL NERVOUS SYSTEM, CARDIOVASCULAR SYSTEM

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE: NONE IDENTIFIED

ROUTES OF ENTRY: INHALATION, INGESTION, EYE CONTACT, SKIN CONTACT

EMERGENCY AND FIRST AID PROCEDURES

CALL A PHYSICIAN.

IF SWALLOWED, DO NOT INDUCE VOMITING; IF CONSCIOUS, GIVE WATER, MILK, OR MILK OF MAGNESIA.

IF INHALED, REMOVE TO FRESH AIR. IF NOT BREATHING, GIVE ARTIFICIAL RESPIRATION. IF BREATHING IS DIFFICULT, GIVE OXYGEN.

IN CASE OF CONTACT, IMMEDIATELY FLUSH EYES OR SKIN WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES.

6 - REACTIVITY DATA

8.

STABILITY: STABLE HAZARDOUS POLYMERIZATION: WILL NOT OCCUR
CONDITIONS TO AVOID: HEAT, FLAME, OTHER SOURCES OF IGNITION, SUNLIGHT

INCOMPATIBLES: STRONG REDUCING AGENTS, AMMONIA, AMMONIUM SALTS,
ACETYLENE, ACETALDEHYDE, COMBUSTIBLE MATERIALS, ALUMINUM, CHEMICALLY
ACTIVE METALS, POWDERED METALS, CARBIDES, AMMONIUM HYDROXIDE

7 - SPILL AND DISPOSAL PROCEDURES

STEPS TO BE TAKEN IN THE EVENT OF A SPILL OR DISCHARGE
WEAR SELF-CONTAINED BREATHING APPARATUS AND FULL PROTECTIVE CLOTHING.
WITH CLEAN SHOVEL, CAREFULLY PLACE MATERIAL INTO CLEAN, DRY CONTAINER AND
COVER; REMOVE FROM AREA. FLUSH SPILL AREA WITH WATER.

DISPOSAL PROCEDURE
DISPOSE IN ACCORDANCE WITH ALL APPLICABLE FEDERAL, STATE, AND LOCAL
ENVIRONMENTAL REGULATIONS.

EPA HAZARDOUS WASTE NUMBER: D002, D003 (CORROSIVE, REACTIVE WASTE)

8 - PROTECTIVE EQUIPMENT

VENTILATION: USE GENERAL OR LOCAL EXHAUST VENTILATION TO MEET
TLV REQUIREMENTS.

RESPIRATORY PROTECTION: NONE REQUIRED WHERE APPROPRIATE VENTILATION
CONDITIONS EXIST. IF THE TLV IS EXCEEDED, A SELF-
CONTAINED BREATHING APPARATUS IS ADVISED.

EYE/SKIN PROTECTION: SAFETY GOGGLES, UNIFORM, APRON, RUBBER GLOVES ARE
RECOMMENDED.

9 - STORAGE AND HANDLING PRECAUTIONS

SAF-T-DATA(TM) STORAGE COLOR CODE: WHITE (CORROSIVE)

SPECIAL PRECAUTIONS
KEEP CONTAINER TIGHTLY CLOSED. STORE IN CORROSION-PROOF AREA.
KEEP CONTAINERS OUT OF SUN AND AWAY FROM HEAT.

10 - TRANSPORTATION DATA AND ADDITIONAL INFORMATION

DOMESTIC (D.O.T.)
PROPER SHIPPING NAME CHEMICALS, N.O.S. (NON-REGULATED)

INTERNATIONAL (I.M.O.)
PROPER SHIPPING NAME CHEMICALS, N.O.S. (NON-REGULATED)