

# NOSB NATIONAL LIST FILE CHECKLIST

## PROCESSING

**MATERIAL NAME:** Potassium iodide

**CATEGORY:** Synthetic Allowed

Complete?: 3/17

NOSB Database Form

References

MSDS (or equivalent)

FASP (FDA)

Date file mailed out: 2/14/95

TAP Reviews from: Bob Durst

Steve Taylor

Richard Zheuer

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 Potassium iodide

Type of Use:  Crops;  Livestock;  Processing

TAP Review by:

1. Steve Taylor
2. Richard Theuer
3. Bob Dorst

Comments/Questions:

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My Opinion/Vote is:

Signature \_\_\_\_\_ Date \_\_\_\_\_

non  
syn

allowed  
no 7/7

1.

# USDA/TAP REVIEWER COMMENT FORM

in 50-85  
allowed

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: Feb 14

Name of Material: Potassium Iodide

Reviewer Name: Steve Taylor

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

Synthetic

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

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?

Made by electrolysis from HI and  $KHCO_3$

Signature Steve Taylor

Date 3-10-95



2.

USDA/TAP REVIEWER  
COMMENT FORM

Original mailing date: 14 Feb 1995.

Name of Material: Potassium Iodide 21CFR184.1634  
Reviewer Name: Richard C. Theuer

**NATURAL** Potassium iodide occurs naturally in sea water and in salt deposits.

**SYNTHETIC** Potassium iodide is produced synthetically by reacting hydriodic acid with potassium bicarbonate.

**COMMENTS RE SECTION 2119(m) CRITERIA:**

1. Potassium iodide is a primary source of iodine for food enrichment. Lack of the essential nutrient iodine leads to goiter (mild to moderate deficiency) or Cretinism (severe deficiency during pregnancy).
2. Potassium iodide is a primary source of iodine in iodized table salt.
3. Potassium iodide is Generally Recognized As Safe.
4. Natural potassium iodide is available so the synthetic material need not be on the National List of Allowed Synthetics.
5. The usage level for iodine in foods is extremely low. For example, iodized salt contains only 0.01% iodine (less than 0.013% potassium iodide).

The following natural substance should be allowed as an ingredient in organic foods. It should not be added to the National List of natural substances prohibited for use as ingredients or processing aids in Organic Food:

potassium iodide (produced by mining or from brine).

February 22, 1995



**USDA/TAP Reviewer  
Comment Form**

3.

Material: Potassium iodide

Reviewer: Bob Durst

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

It is a synthetic substance. It is used as a nutrient.

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

The file is 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 restriction or limitations that should be placed on this material by use or application on the National List?

Must be listed on the ingredient label if it used used.

Any additional comments or references?

As with all synthetic inorganic salts, source must be food grade. In addition each lot should be analyzed for toxic element concentrations (mercury, lead, cadmium, arsenic, thallium and antimony) and a near zero tolerance adopted.

Signature

Robert W. Durst

Date

3/4/95





# NOSB Materials Database

4.

## Identification

**Common Name** **Potassium iodide** **Chemical Name**  
**Other Names**  
**Code #: CAS** **Code #: Other**  
**N. L. Category** Synthetic Allowed **MSDS**  yes  no

## Chemistry

**Family**  
**Composition** KI  
**Properties** Hexahedral crystals, either transparent and colorless or somewhat opaque and white, or a white, granular powder. Soluble.  
**How Made** Made by electrolysis from HI and  $\text{KHCO}_3$ . Purified by melting in dry hydrogen. Also occurs naturally in sea water and in salt deposits.

Processing

## Use/Action

**Type of Use**  
**Specific Use(s)** Nutrient; dietary supplement. Primary source of iodine.  
**Action**  
**Combinations**

## Status

**OFPA**  
**N. L. Restriction**  
**EPA, FDA, etc** FDA-GRAS  
**Directions**  
**Safety Guidelines**  
**State Differences**  
**Historical status**  
**International status**

# NOSB Materials Database

5.

## OFPA Criteria

2119(m)1: chemical interactions      Not Applicable

2119(m)2: toxicity & persistence      Not Applicable

2119(m)3: manufacture & disposal consequences

2119(m)4: effect on human health

Nutrient.

2119(m)5: agroecosystem biology      Not Applicable

2119(m)6: alternatives to substance  
None.

2119(m)7: Is it compatible?

## References

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**MSDS for POTASSIUM IODIDE**  
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**1 - PRODUCT IDENTIFICATION**  
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PRODUCT NAME: POTASSIUM IODIDE  
FORMULA: KI FORMULA WT: 166.01  
CAS NO.: 7681-11-0 NIOSH/RTECS NO.: TT2975000  
COMMON SYNONYMS: IODIC ACID, POTASSIUM SALT  
PRODUCT CODES: 5684,5080,3162,3169,5484,5110,3168  
EFFECTIVE: 10/03/86 REVISION #02

**PRECAUTIONARY LABELLING**

BAKER SAF-T-DATA(TM) SYSTEM  
HEALTH - 2 MODERATE  
FLAMMABILITY - 0 NONE  
REACTIVITY - 1 SLIGHT  
CONTACT - 1 SLIGHT

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

LABORATORY PROTECTIVE EQUIPMENT: SAFETY GLASSES; LAB COAT  
PRECAUTIONARY LABEL STATEMENTS

**WARNING**

**CAUSES IRRITATION**

HARMFUL IF SWALLOWED AVOID CONTACT WITH EYES, SKIN, CLOTHING.  
KEEP IN TIGHTLY CLOSED CONTAINER. WASH THOROUGHLY AFTER HANDLING.  
SAF-T-DATA(TM) STORAGE COLOR CODE: ORANGE (GENERAL STORAGE)

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**2 - HAZARDOUS COMPONENTS**  
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COMPONENT	%	CAS NO.
POTASSIUM IODIDE	90-100	7681-11-0

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**3 - PHYSICAL DATA**  
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BOILING POINT: 1420 C ( 2588 F) VAPOR PRESSURE(MM HG): N/A  
MELTING POINT: 723 C ( 1333 F) VAPOR DENSITY(AIR=1): N/A  
SPECIFIC GRAVITY: 3.12 EVAPORATION RATE: N/A  
(H2O=1) (BUTYL ACETATE=1)  
SOLUBILITY(H2O): APPRECIABLE (MORE THAN 10 %) % VOLATILES BY VOLUME: 0  
APPEARANCE & ODOR: WHITE ODORLESS GRANULES OR CRYSTALS.

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**4 - FIRE AND EXPLOSION HAZARD DATA**  
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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.  
TOXIC GASES PRODUCED: OXIDES

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**5 - HEALTH HAZARD DATA**  
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CARCINOGENICITY: NTP: NO IARC: NO Z LIST: NO OSHA REG: NO

**EFFECTS OF OVEREXPOSURE**

INHALATION OF DUST MAY CAUSE IRRITATION TO UPPER RESPIRATORY TRACT.  
CONTACT WITH SKIN OR EYES MAY CAUSE IRRITATION.  
INGESTION OF LARGE QUANTITIES MAY CAUSE GASTROINTESTINAL IRRITATION.  
CHRONIC EFFECTS OF OVEREXPOSURE MAY INCLUDE CENTRAL NERVOUS SYSTEM  
DEPRESSION.

TARGET ORGANS: NONE IDENTIFIED

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE: NONE IDENTIFIED

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

EMERGENCY AND FIRST AID PROCEDURES

CALL A PHYSICIAN.

IF SWALLOWED, IF CONSCIOUS, GIVE LARGE AMOUNTS OF WATER. INDUCE VOMITING.

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 WITH PLENTY OF WATER FOR AT  
LEAST 15 MINUTES. FLUSH SKIN WITH WATER.

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**6 - REACTIVITY DATA**

STABILITY: STABLE                      HAZARDOUS POLYMERIZATION: WILL NOT OCCUR

CONDITIONS TO AVOID: LIGHT, MOISTURE

INCOMPATIBLES: STRONG OXIDIZING AGENTS,  
BROMINE TRIFLUORIDE AND TRICHLORIDE, METALLIC SALTS

DECOMPOSITION PRODUCTS: IODINE, OXIDES  
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**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.  
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**8 - PROTECTIVE EQUIPMENT**

VENTILATION: USE ADEQUATE GENERAL OR LOCAL EXHAUST VENTILATION  
TO KEEP FUME OR DUST LEVELS AS LOW AS POSSIBLE.

RESPIRATORY PROTECTION: NONE REQUIRED WHERE ADEQUATE VENTILATION  
CONDITIONS EXIST. IF AIRBORNE CONCENTRATION IS  
HIGH, USE AN APPROPRIATE RESPIRATOR OR DUST MASK.

EYE/SKIN PROTECTION: SAFETY GLASSES WITH SIDESHIELDS, GLOVES ARE RECOMMENDED.  
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**9 - STORAGE AND HANDLING PRECAUTIONS**

SAF-T-DATA(TM) STORAGE COLOR CODE: ORANGE (GENERAL STORAGE)

SPECIAL PRECAUTIONS

KEEP CONTAINER TIGHTLY CLOSED. SUITABLE FOR ANY CHEMICAL STORAGE AREA.  
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**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)

NUM=2590

U.S. FOOD AND DRUG ADMINISTRATION  
FOOD ADDITIVE SAFETY PROFILE

POTASSIUM IODIDE

AS#:	007681110	HUMAN CONSUMPTION:	0.02471	MG/KG BW/DAY/PERSON
ASP#:	2590	MARKET DISAPPEARANCE:	29166.666	LBS/YR
(PE:	NEW	MARKET SURVEY:	87	
AS#:		JECFA:		
EMA#:		JECFA ADI:		
AS#:		JECFA ESTABLISHED:		MG/KG BW/DAY/PERSON
		LAST UPDATE:	931215	
V:	166	DENSITY:		
		LOGP:		

STRUCTURE CATEGORIES: B1

COMPONENTS:

(NONYMS: POTASSIUM MONIODIDE  
POTASSIUM IODIDE (KI))

CHEMICAL FUNCTION: D

TECHNICAL EFFECT: NUTRIENT SUPPLEMENT  
TRACER

FOR REG NUMBERS: 184.1634 582.80 172.375

MINIMUM TESTING LEVEL: 3

COMMENTS: STUDIES 1-5 FROM SCOGS-39

EX 7: ACUTE TOXICITY INFORMATION

STUDY:	14	SOURCE:	FAP 0H3533 3:328
SPECIES:	RAT	YEAR:	
COMMENTS:	STUDY 14 LD50 FOR MALES ONLY	LD50:	4800 MG/KG BW
STUDY:	3	SOURCE:	J PHARM EXP THER 120:171-178
SPECIES:	MOUSE	YEAR:	1957
COMMENTS:	STUDY 3 LD50 FOR FEMALES ONLY	LD50:	1862 MG/KG BW
	STUDY 2 LD50 = 1982 MG/KG FOR FEMALES ONLY		

DCNUM=2590

STUDY 1 LD50 = 2068 MG/KG FOR FEMALES ONLY

OX 9: ORAL TOXICITY STUDIES (OTHER THAN ACUTE)

STUDY: 4 COMPLETENESS: SOURCE: PROC SOC EXP BIOL MED  
 118:1194-1197  
 (PE: SUBCHRONIC RODENT YEAR: 1965 MG/KG BW/DAY  
 SPECIES: RAT LEL: > MG/KG BW/DAY  
 DURATION: 98 DAYS HNEL: 25 MG/KG BW/DAY  
 EFFECTS: NO EFFECTS  
 NOTES: ONE DOSE LEVEL ONLY

STUDY: 5 COMPLETENESS: SOURCE: CANCER 21:952-963  
 (PE: RODENT (NON-RAT) ONCOGENICITY YEAR: 1968  
 SPECIES: SYRIAN HAMSTER LEL: > MG/KG BW/DAY  
 DURATION: 960 DAYS HNEL: 6 MG/KG BW/DAY  
 EFFECTS: NO EFFECTS  
 NOTES: ONE DOSE LEVEL ONLY  
 COMMENTS: TEST COMPOUND ADMINISTERED IN DRINKING WATER