PRODUCT SPECIFICATION SHEET
Potassium iodate, FCC/drum-10 kg

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1.0 General Information

1.1 Product Description

The product is a food-grade potassium iodate (KIO3), supplied as a white crystalline powder in a 10 kg HDPE drum.

1.2 Intended Use

For use as an ingredient, in the manufacture of iodized food-grade salt for human consumption.

1.3 Product Classification

Food fortificant; Food Chemicals Codex (FCC) grade.

2.0 Product Composition

2.1 Chemical Identity

Potassium iodate (KIO3) must be of food-grade quality and fit for human consumption.

Table 1: Chemical identity

Parameter	Requirement
Chemical name	Potassium iodate (INS 917)
Molecular formula	KIO3
CAS Registry Number	7758-05-6
Relative molecular mass	214.00 g/mol
Compendial standard	Food Chemicals Codex (FCC), current edition
Appearance	White crystalline powder; odourless; non-hygroscopic

3.0 Manufacturing Requirements and Quality Standards

3.1 Manufacturing Requirements

Potassium iodate must be manufactured, handled, packed and released as a food-grade chemical ingredient under a documented quality management system and good manufacturing practices appropriate to the manufacture of food ingredients. Controls must ensure identity, purity, traceability, prevention of contamination and consistent compliance with the FCC specification.

The supplier must maintain batch manufacturing and quality-control records sufficient to demonstrate traceability of each lot supplied to UNICEF.

4.0 Finished Product Test Specification

Potassium Iodate must be manufactured to comply with the latest FCC monograph for Potassium Iodate as per the below indicative test specification. FCC methods should be used where specified; an alternative method may be used only when demonstrated to be suitable and equivalent for the intended purpose.

Table 1: Minimum release tests and acceptance criteria for potassium iodate

Test	Test Method / Standard	Acceptance Criteria
Identification and Assay		
Appearance	FCC	White crystalline powder
Solubility	FCC	1 g dissolves in about 15 mL of water; insoluble in alcohol
pH	FCC	pH of a 1:20 aqueous solution: 5–8
Identification	FCC Identification procedure: starch TS and 20% hypo-phosphorous acid	A transient blue color appears
Assay (KIO_3), dried basis	FCC Assay procedure: iodometric titration; sample previously dried at 105°C for 3 h	NLT 99.0% and NMT 101.0%
Loss on drying	FCC Loss on Drying, Appendix IIC; dry at 105°C for 3 h	NMT 0.5%
Inorganic Impurities		
Chlorate	FCC Inorganic Impurities – Chlorate	Sample remains white and no odor or gas evolves (limit about 0.01%)
Iodide	FCC Inorganic Impurities – Iodide	No blue color appears (limit about 0.002%)
Lead	FCC Lead Limit Test, Flame Atomic Absorption Spectrophotometric Method, Appendix IIIB or equivalent	NMT 4 mg/kg

For heavy metals not specifically listed above, suppliers should ensure that levels are controlled and do not pose a risk to human health under the intended conditions of use.

5.0 Packaging

Packaging materials must be clean, food-contact compatible, suitable for an oxidizing solid and capable of protecting the product from contamination, moisture and oxygen ingress and loss during storage, handling and transport.

5.1 Primary Packaging – Inner Liner

The product must be packed in a securely sealed, food-grade polyethylene liner that protects against contamination, moisture ingress and loss. The liner must be compatible with potassium iodate throughout the labelled shelf life.

5.2 Secondary Packaging – Drum

The sealed inner liner must be contained in a securely closed HDPE drum containing 10 kg net product. The drum must provide adequate protection during storage, handling and transport and, together with the liner and closure system, comply with applicable dangerous goods transport requirements for potassium iodate.

5.3 Tertiary Packaging and Palletization

Export packing and palletization should be suitable for long-distance shipment and humanitarian logistics. Pallet loads must be stable, protected from water ingress and secured to prevent movement or damage during transport.

The gross weight of a pallet should not exceed 600 kg unless otherwise agreed with the assigned freight forwarder or specified in the Purchase Order.

Pallet height should be 1,200 mm or 2,400 mm, as applicable, to optimize freight utilization. Loads should be sufficiently protected and reinforced to allow safe handling and, where appropriate, double stacking. Export packaging should be proportionate to its contents; empty space should not exceed 5% of the packing-unit volume unless adequately buffered, preferably using environmentally friendly cushioning materials.

5.4 Dangerous Goods Packaging

Packaging, marking and documentation for transport must comply with the current SDS and all applicable dangerous goods regulations for the relevant mode(s) of transport.

6.0 Labeling and Artwork

6.1 Product Labeling

The individual drum label must be legible, securely affixed and resistant to normal handling and transport conditions. Labelling must comply with applicable food-ingredient and hazardous-material requirements.

6.1.1 Minimum Labelling

The product label should include, at minimum, the following information:

- Product name: Potassium iodate (KIO_3), Food Chemicals Codex (FCC) grade
- Net weight
- Batch / lot number
- Manufacturing date
- Expiration date
- Storage and handling conditions
- Name and address of the manufacturer

- Country of origin, where required
- Dangerous-goods transport pictograms and markings, including UN number and hazard class, as applicable

6.2 Secondary Container and Pallet Labeling

Outer transport packaging and pallet labels must follow applicable UNICEF packing, packaging and labelling requirements. An A4 sized label must also be placed outside the individual pallets in line with GS labelling requirements specified in UNICEF specification on packing, packaging and labelling, current version.

7.0 Shelf Life

The shelf life should be, at minimum, 24 months. Product with a longer justified shelf life or retest period is preferred.

7.1 Storage and Transport Conditions

Storage and transport conditions must follow the manufacturer's current Safety Data Sheet (SDS) and reflect the oxidizing properties of potassium iodate and applicable dangerous-goods requirements.

7.1.1 Hazardous Material and Transport Documentation

A current Safety Data Sheet (SDS) must be provided. A transport certificate and any other dangerous-goods documentation required for the mode of transport must accompany the shipment.

Based on the existing UNICEF specification, the transport classification is:

- UN number: UN 1479
- Hazard class: 5.1 (oxidizing substance)
- Packing group: II
- Proper shipping name: Oxidizing solid, n.o.s. (Potassium iodate)

9.0 References

9.1 Applicable References

- Food Chemicals Codex (FCC), current edition, Potassium Iodate monograph
- UNICEF specification on packing, packaging and labelling, current version

9.2 Useful References

- WHO. Guideline: Fortification of food-grade salt with iodine for the prevention and control of iodine deficiency disorders (2014)

FOR MORE INFORMATION

Contact CPHHQ-SD-Nutrition Supplies: sd.nutritionsupplies@unicef.org
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