



DEFENSE LOGISTICS AGENCY
DEFENSE NATIONAL STOCKPILE CENTER
8725 JOHN J. KINGMAN ROAD, SUITE 3229
FT. BELVOIR, VIRGINIA 22060-6223

IN REPLY
REFER TO

DNOSC-C

November 15, 2007

**AMENDMENT NO. 006
TO
SOLICITATION OF OFFERS
FOR TIN UNDER
DLA-TIN-014**

The above referenced Solicitation for the sale of Tin is hereby amended to schedule an additional offering and to revise various sections of the Solicitation as follows:

1. Amendment Nos. 001 through 005 are deleted in their entirety.
2. Delete all references to rail shipments in the Solicitation. Available transportation under this Solicitation is truck only.
3. **Section A.1 Introduction (SEP 02), Paragraph a.**

Delete this paragraph in its entirety and replace with the following:

- a. The Defense Logistics Agency (DLA), Defense National Stockpile Center (DNOSC), is soliciting offers for the sale of approximately 4,000 metric tons of Tin in Fiscal Year 2008. The opening will be held on **Wednesday, November 28, 2007 at 1:00 p.m.**, local time, Ft. Belvoir, VA. Offers must be received at the address in Section B.2.a. by 1:00 p.m. local time, Ft. Belvoir, VA. In the event that DNOSC is closed at that time, offers for that day will be received at 1:00 p.m. on the next DNOSC business day.

4. **Section A.2 Description (JAN 95), Paragraph a.**

Delete this paragraph in its entirety and replace with the following:

- a. A description of the material offered for sale is listed in **I.2 Item Offer Page (NOV 07)** and **J.1 Description of Stockpile TIN (JUN 03)**. The material is located at Hammond, IN. (See paragraph 20 of this Amendment).

5. **Add the following as Section A.5 Wood Packaging Materials Requirements (JUN 06).**

A.5 Wood Packaging Materials Requirements (JUN 06)

Wood packaging materials utilized in the storage and shipment of National Defense Stockpile materials, including, but not limited to, pallets, boxes, kegs, and dunnage lumber, do not meet the requirements of U.S. Department of Agriculture Regulations at 7 CFR 319.40 or International Standards for Phytosanitary Measures (ISPM) 15, "Guidelines for Regulating Wood Packaging Materials in International Trade." Stockpile wood packaging materials have not been heat treated or fumigated with methyl bromide and are not marked to indicate that they meet the requirements of these regulations and standards. As a result, it may not be possible to export or import these wood packaging materials.

6. **Section B.1 Submittals (FEB 03), Paragraph h.**

Delete this paragraph in its entirety and replace with the following:

h. ATTN: DNSC-CC, Tin Contract Specialist
Defense National Stockpile Center
8725 John J. Kingman Road
Suite 3229
Fort Belvoir, VA 22060-6223
Fax: 703-767-5494

7. **Section B.3 Minimum/Maximum Quantity (JAN 95)**

Delete this section in its entirety and replace with the following:

Offers shall be submitted for a minimum of 260 metric tons (MT), a maximum of 4,000 MT or 20 MT increments in between the minimum and maximum.

8. **Section B.4 Reference Price (JUN 03)**

Delete Section B.4 Reference Price in its entirety and replace with the following:

Section B.4 Reference Price and Monthly Declaration (NOV 07)

- a. Offers shall be expressed as a percentage of the monthly average of the London Metal Exchange (LME) official cash bid price, plus a premium (>100%) or minus a discount (<100%) to this reference price. The premium or discount must be expressed as a percentage (e.g., 110%). **Any Offeror that submits an offer for less than 100 percent of the reference price must justify the price by submission of supporting documentation.**

- b. During contract performance, the price for tin to be used as the LME Reference Price for the month will be determined by comparing the LME official cash bid price and the LME official three month bid price averages for a calendar month and using whichever is lower.
- c. The actual contract price for tin will be determined on the date the Contractor's monthly declaration for a specific quantity of tin is received by the Government, as follows: the unit price (U.S. dollars per pound) shall be calculated by multiplying the contract percentage, which includes the premium or discount, by the prior month's LME Reference Price, as defined in paragraph **b.**, above, and dividing the resulting amount by 2,204.6 (lbs/MT), and then rounding to the nearest quarter or one cent (i.e., 0.0025, 0.0050, and 0.0075).
- d. The Contractor shall submit one declaration each calendar month, identifying the quantity of tin to be priced that month and confirming the calculation of the price as specified above. The Contractor shall submit this declaration to the Contracting Officer no later than the 15th calendar day of each month.

9. **Section D - Payment**

Delete this section in its entirety and replace with the following:

SECTION D – PAYMENT

D.1 Payment (NOV 07)

- a. Payment shall be made in U.S. dollars.
- b. Payment **for material** shall be made **only** by wire transfer (Fedwire for domestic, within U.S. wire payment; or International wire transfer for wire payments from outside the U.S.). Payment for **adjustments for variations in quantity or weight of material shipped**, storage charges, interest, penalty charges, or administrative charges may be made by wire transfer (Fedwire or International), or company or bank check. If attempted payments for material (other than payments for adjustments for variations in quantity or weight) are made by check, delays in shipment will result, and the payment may be returned to the sender. The Contractor may incur charges if payments are delinquent.
- c. Payment by wire transfer (Fedwire or International).
 - (1) Wire transfer payment shall be made in accordance with instructions in **Section J.5**. Fees for wire transfers are the responsibility of the Contractor. Payment shall be accompanied by **identifying information including the contract number, invoice number (if applicable), and a description of the material purchased**.

- (2) If wire transfer payment is not made in accordance with the instructions in **Section J.5**, or if identifying information is not provided, shipment of material may be delayed by up to one week, the wire transfer may be returned to the sender or a Contractor may incur charges if payments are delinquent.

d. Payment by company or bank check.

- (1) All checks must be drawn on a U.S. domestic bank or on the United States branch of an acceptable foreign bank and must be payable in United States currency. **A service charge of \$100.00 will be applied to all returned checks.**
- (2) Payment shall be made to the **Defense Finance and Accounting Service - Columbus (DFAS-Columbus)**. If a check is not made payable to DFAS-Columbus, the check may be returned and the \$100.00 fee stated in **D.1.d.(1)** charged. Payment shall be accompanied by **identifying information including the contract number, invoice number, and a description of the material purchased**. Check payments which do not have the required identification may be returned and the Contractor may incur charges if payments are delinquent. Check payments shall be sent to:

ATTN: DNSC-BF, Accounts Receivable
Defense National Stockpile Center
8725 John J. Kingman Road
Suite 3229
Fort Belvoir, VA 22060-6223

- e. Invoices issued for adjustments for variations in quantity or weight, storage charges, interest, penalty charges, or administrative charges shall be paid promptly.
- f. If payment is not made in full within 30 calendar days of issuance of an invoice as specified in **D.1.e.**, the Contractor will be considered delinquent and any outstanding charges will be reduced by any subsequent payments. No material will be released until all delinquent charges are paid. (See Sections **F.1.a.** and **G.7.**)

D.2 Payment Due Date (OCT 05)

- a. Payment due dates will be applied as follows:

- (1) If payment terms are not extended, payment will be made before shipment of material and before the end of the contract period specified in the executed **Section I.1 Sale of Government Property Negotiated Sales Contract (JUN 03)**.
 - (2) If payment terms are approved, the Contractor shall pay the Government the full amount of **each** shipment no later than 30 calendar days after DNSC receives current, accurate and complete Shipping Instructions. Shipping Instructions must be submitted on or before the final day of the contract period. Notwithstanding any other provision of the contract, payment is due with or without the issuance of an invoice by the Government. If the Contractor fails to make payment timely, the Contractor will be considered delinquent (see Section **D.1.f.**, **F.1.a.**, and **G.10**), and the Government, at its sole discretion, may revoke payment terms and take other appropriate action in accordance with Section **G.7**. If the Contractor fails to submit current, accurate and complete Shipping Instructions on or before the final day of the contract period, the Government will revoke payment terms and payment must be made **before** shipment of material.
- b. If payment is not received by 2:00 p.m., local time Fort Belvoir, VA, on the payment due date, payment will not be credited until the next Government business day. Interest and penalty charges will accrue accordingly.
 - c. In the event the payment due date falls on a Saturday, Sunday, or holiday, then the payment due date will be extended to the next Government business day.

D.3 Interest (MAY 04)

- a. All amounts that become payable by the Contractor to the Government under this contract shall bear simple interest from the date due until paid. The interest rate shall be the interest rate established by the Secretary of the Treasury as provided in 41 U.S.C. 611, which is applicable to the period in which the amount becomes due, as provided in paragraph **b.**, below.
- b. Amounts shall be due at the earliest of the following dates:
 - (1) The final day of the contract period specified in Section **I.1 Sale of Government Property Negotiated Sales Contract (JUN 03)** (with or without the issuance of an invoice by the Government);
 - (2) The date of the first written demand for payment under the contract, including any demand resulting from a default termination, unless paid within 30 days of becoming due; or
 - (3) If payment terms have been approved, 30 calendar days after the date that DNSC receives current, accurate and complete Shipping Instructions

provided that Shipping Instructions are submitted on or before the final day of the contract period. If Shipping Instructions are not submitted on or before the final day of the contract period, amounts shall be due in accordance with the provisions of Section **D.3.b.(1)**.

D.4 Penalty and Administrative Charges (MAY 04)

In addition to interest charges specified in Section **D.3**, above, a penalty charge of 6 percent per annum shall be assessed on any debt principal that is delinquent more than 90 calendar days. Penalty charges shall accrue from the date the principal amount due becomes delinquent until paid. Additional administrative charges may be assessed, if needed. Administrative charges relate only to delinquent debts and will be assessed to cover expenses incurred by the Government in the recovery of such debts.

10. Section E.1 Removal of Material (JAN 02),

Delete this section in its entirety and replace with the following:

E.1 Removal of Material (JUL 04)

- a. The contract period begins on the date of contract award and shall expire 180 calendar days from this date. No later than the fifteenth (15th) calendar day of each calendar month, the Contractor shall furnish the Contracting Officer, in writing, a declaration of the quantity of material to be priced for that month. This quantity declared shall be for at least a minimum of one-sixth of the total quantity awarded under the contract. The Contractor shall have 45 calendar days from the date the declaration is received by the Government to remove the declared quantity of material, except that all material under the contract must be removed within the 180 day contract period. The schedule of these minimum and maximum monthly quantities shall be contained in the completed Section **I.3 Anticipated Removal Schedule (NOV 07)** which shall be a part of this contract.
- b. If the Contractor fails to: (1) submit the monthly declaration by the 15th calendar day of the month and make payment in accordance with Section D; or (2) remove the minimum quantity in accordance with Section **I.3**, the Contractor shall be considered delinquent and no material will be shipped until payment has been received for either the minimum monthly quantity or the declared quantity, whichever is greater. If the Contractor has failed to complete removal of all of the material on or before the last day of the contract period, the Contractor will be considered delinquent and no material will be shipped until payment for all remaining material has been received.
- c. The contract period and the 45-calendar day period following the submission of a declaration include Saturdays, Sundays, and holidays. If the last day of either period is a Saturday, Sunday, or holiday, or the storage location is otherwise

closed on those days, the period of contract performance or the 45-calendar day period will be extended to the next Government workday.

11. Section E.2 Storage Charges (JUL 97), paragraph a.

Delete this paragraph in its entirety and insert the following therefor:

- a. Storage charges shall be assessed on (1) material remaining unshipped from a monthly declaration after the 45-calendar day period following the receipt of the declaration by the Government and/or (2) any and all material remaining unshipped after the last day of the contract period, as applicable. The Government reserves the right to remove any remaining material to a commercial storage facility and be reimbursed by the Contractor for any expenses incurred. Storage charges continue to accrue until all the material has been removed in accordance with the monthly declaration or the end of the contract period, as applicable, or the contract is terminated for default, in which case the Contractor will be liable for damages, as set forth in Section **G.7 Default** of the Solicitation.

12. Insert the following as Section **F.8 Environmental Policy (NOV 05):**

F.8 Environmental Policy (NOV 05)

The Contractor, its agents and employees shall comply with the Environmental Safety and Occupational Health Policy of the Defense National Stockpile Center while on storage facilities where stockpile material is stored. The Contractor shall review information on DNSC's Environmental Safety and Occupational Health Policy on the DNSC Website at <https://www.dnsc.dla.mil> by clicking on "I Am The Key."

13. Section G.10 Setoff of Funds (JUL 98)

Delete this section in its entirety and replace with the following:

G.10 Setoff of Funds (MAY 04)

The Contractor agrees that the Government may use all or portion of any monies received by the Government to satisfy, in whole or in part, any debt (e.g., delinquent payments, interest, penalty charges, administrative charges, or storage charges), arising out of this or any other transaction.

14. Insert the following as Sections **G.13 Applicable Law for Breach of Contract Claim (JUL 06) and **G.14 Bankruptcy (JAN 07)**:**

G.13 Applicable Law for Breach of Contract Claim (JUL 06)

United States law will apply to resolve any claim of breach of this contract.

G.14 Bankruptcy (JAN 07)

In the event the contractor enters into proceedings relating to bankruptcy, whether voluntary or involuntary, the contractor agrees to furnish, by certified mail or electronic commerce method authorized by the contract, written notification of the bankruptcy to the contracting officer responsible for administering the contract. This notification shall be furnished within five days of the initiation of the proceedings relating to bankruptcy filing. This notification shall include the date on which the bankruptcy petition was filed and the identity of the court in which the bankruptcy petition was filed.

15. Section I.1 Sale of Government Property Negotiated Sales Contract (JUN 03).

A copy of this section is attached to this amendment.

16. Section I.2 Item Offer Page - DLA-TIN-014 (JUN 03)

Delete this section in its entirety and replace with the attached **Section I.2 Item Offer Page – DLA-TIN-014 (NOV 07)**.

17. Section I.3 Anticipated Removal Schedule (JUN 03)

Delete this section in its entirety and replace with the attached **Section I.3 Anticipated Removal Schedule (NOV 07)**.

18. Section I.4 Certification Regarding Debarment, Suspension, Proposed Debarment, Environmental Compliance and Other Responsibility Matters (JUL 97).

Delete this section in its entirety and replace with the attached **Section I.4 Certification Regarding Debarment, Suspension, Proposed Debarment and Other Responsibility Matters (FEB 07)**.

19. In Section I – SUBMITTALS insert the attached Section I.10 Disputes: Agreement to Use Alternative Dispute Resolution (JUL 06).

20. Section J.2 Storage Locations (JUN 03).

Add storage location information as follows:

Hammond Depot
3200 Sheffield Avenue
Hammond, IN 46327-1003
Telephone: (219) 937-5383
Fax: (219) 937-5284
Depot Manager: Mr. John Olszewski
Hours of Operation: 0730 – 1530, Monday – Friday

*Available transportation for the Hammond Depot is truck ONLY.

DNSC Headquarters
Mary Jackson
Telephone No. (703) 767-7606
Facsimile No. (703) 767-7608

21. Section J.4 Material Safety Data Sheet (MAR 00)

Delete this section in its entirety and replace with the attached **Section J.4 Material Safety Data Sheet (JUN 07)**.

22. Section J.5 FEDWIRE PROCEDURES (JAN 95)

Delete this section in its entirety and replace with the attached **Section J.5 FEDWIRE AND INTERNATIONAL WIRE TRANSFER PROCEDURES (NOV 07)**.

23. Except as provided herein, all other terms and conditions of DLA-TIN-014 remain unchanged and in full force and effect.

24. Offerors shall acknowledge receipt of this Amendment by signing in the space provided below and returning a copy of this form along with their offer to:

ATTN: DNSC-BA/Bid Custodian
Defense National Stockpile Center
8725 John J. Kingman Road
Suite 3229
Fort Belvoir VA, 22060-6223
Facsimile No: (703)-767-5541

Faliure to acknowledge receipt of this Amendment may result in the Offeror being considered ineligible for award

NAME OF FIRM: _____

ADDRESS: _____

TELEPHONE: _____

FACSIMILE: _____

EMAIL: _____

BY: _____

SIGNATURE: _____

TITLE: _____

DATE: _____

I.1 Sale of Government Property Negotiated Sales Contract (JUN 03)

SALE OF GOVERNMENT PROPERTY NEGOTIATED SALES CONTRACT		CONTRACT NUMBER SP0833-		PAGE 1 OF	
<p>This contract is entered into by and between the United States of America, hereinafter called the "Government", represented by the Contracting Officer executing this Contract and the Contractor identified below. The Government agrees to sell and the Contractor agrees to buy the material described below in accordance with the terms and conditions of DLA-TIN-014. In the event of a conflict between the terms of the Solicitation and this Negotiated Sales Contract, the terms of the Negotiated Sales Contract govern.</p>					
<i>ITEM</i>	PROPERTY DESCRIPTION AND LOCATION	QUANTITY	UNIT	UNIT PRICE	AMOUNT
TIN					
CONTRACT PERIOD EXPIRES ON:					
EXECUTION BY CONTRACTOR			EXECUTION BY GOVERNMENT		
DATE (Day, Month, Year)			UNITED STATES OF AMERICA		DATE:
NAME and SIGNATURE OF CONTRACTOR Name and Title: _____ _____ Signature and Title of Person Authorized to Sign			BY: _____		
CONTRACTOR'S NAME AND ADDRESS (Street, City, State and Zip) _____ _____ _____ _____ Telephone Number: _____ Facsimile Number: _____			NAME AND TITLE OF CONTRACTING OFFICER Name: _____ Contracting Officer DNSC-C		

I.2 Item Offer Page – DLA-TIN-014 (NOV 07)

ITEM	LOCATION	BRAND	ORGIN	METRIC TONS	(LBS.)
93	Hammond, IN	3 STAR LONGHORN	DOMESTIC	4,000	8,818,400

I.4 Certification Regarding Debarment, Suspension, Proposed Debarment, and Other Responsibility Matters (FEB 07)

- a. (1) The Offeror certifies, to the best of its knowledge and belief, that –
- (i) The Offeror and/or any of its Principals –
 - (A) Are (____) are not (____) presently debarred, suspended, proposed for debarment, or declared ineligible for the award of contracts by any Federal agency;
 - (B) Have (____) have not (____), within a three-year period preceding this offer, been convicted of or had a civil judgment rendered against them for: commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, state or local) contract or subcontract; violation of Federal or state antitrust statutes relating to the submission of offers; or commission of embezzlement, theft, forgery, bribery, falsification or destruction of record, making false statements, tax evasion, or receiving stolen property; and
 - (C) Are (____) are not (____) presently indicted for, or otherwise criminally or civilly charged by a governmental entity with, commission of any of the offenses enumerated in subdivision a.(1)(i)(B) of this provision.
 - (ii) The Offeror has (____) has not (____), within a three-year period preceding this offer, had one or more contracts terminated for default by any Federal agency.
- (1) “Principals,” for the purposes of this certification, means officers; directors; owners; partners; and, persons having primary management or supervisory responsibilities within a business entity (e.g., general manager; plant manager; head of a subsidiary, division, or business segment, and similar positions).

This Certification Concerns a Matter Within the Jurisdiction of an Agency of the United States and the Making of a False, Fictitious, or Fraudulent Certification May Render the Maker Subject to Prosecution Under Section 1001, Title 18, United States Code.

- b. The Offeror shall provide immediate written notice to the Contracting Officer if, at any time prior to contract award, the Offeror learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

- c. A certification that any of the items in paragraph **a.** of this provision exists will not necessarily result in withholding of an award under this solicitation. However, the certification will be considered in connection with a determination of the Offeror's responsibility. Failure of the Offeror to furnish a certification or provide such additional information as requested by the Contracting Officer may render the Offeror nonresponsible.
- d. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith, the certification required by paragraph **a.** of this provision. The knowledge and information of an Offeror is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.
- e. The certification in paragraph **a.** of this provision is a material representation of fact upon which reliance was placed when making award. If it is later determined that the Offeror knowingly rendered an erroneous certification, in addition to the other remedies available to the Government, the Contracting Officer may terminate the contract resulting from this solicitation for default.

I.10 Disputes: Agreement to Use Alternative Dispute Resolution (JUL 06)

- a. The parties agree to negotiate with each other to try to resolve any disputes that may arise. If unassisted negotiations are unsuccessful, the parties will use alternative dispute resolution (ADR) techniques to try to resolve the dispute. Litigation will only be considered as a last resort when ADR is unsuccessful or has been documented by the party rejecting ADR to be inappropriate for resolving the dispute.
- b. Before either party determines ADR inappropriate, that party must discuss the use of ADR with the other party. The documentation rejecting ADR must be signed by an official authorized to bind the contractor, or, for the Agency, by the contracting officer, and approved at a level above the contracting officer after consultation with the ADR Specialist and with legal counsel. Contractor personnel are also encouraged to include the ADR Specialist in their discussions with the contracting officer before determining ADR to be inappropriate.
- c. If you wish to opt out of this clause, check here (___). Alternate wording may be negotiated with the contracting officer.

J.4 MATERIAL SAFETY DATA SHEET (JUN 07)

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

DEFENSE LOGISTICS AGENCY
DEFENSE NATIONAL STOCKPILE CENTER
8725 JOHN J. KINGMAN ROAD
SUITE 3339
FORT BELVOIR, VA 22060-6223

EMERGENCY TELEPHONE NUMBER:
1-800-424-9300 (NORTH AMERICA)
1-703-527-3887 (INTERNATIONAL)

SUBSTANCE: TIN

TRADE NAMES/SYNONYMS:

METALLIC TIN; WANG; TIN ELEMENT; STANNUM; C.I. 77860; C.I. PIGMENT METAL 5; T-121,T-122,T-123,T-124,T-127,T-128,T-129,T-130; SN; DLA23482; RTECS XP7320000

CHEMICAL FAMILY: metal

CREATION DATE: Mar 24 1995

REVISION DATE: Jun 14 2007

2. COMPOSITION, INFORMATION ON INGREDIENTS

COMPONENT: TIN

CAS NUMBER: 7440-31-5

EC NUMBER (EINECS): 231-141-8

PERCENTAGE: 100.0

3. HAZARDS IDENTIFICATION

NFPA RATINGS (SCALE 0-4): HEALTH=1 FIRE=0 REACTIVITY=0

EMERGENCY OVERVIEW:

PHYSICAL DESCRIPTION: Odorless, silver-white, lustrous metal in pig, ingot or tub form.

MAJOR HEALTH HAZARDS: No significant target effects reported.

PHYSICAL HAZARDS: Dust/air mixtures may ignite or explode.

POTENTIAL HEALTH EFFECTS:

INHALATION:

SHORT TERM EXPOSURE: irritation, metallic taste, nausea, vomiting, diarrhea, headache

LONG TERM EXPOSURE: lung damage

SKIN CONTACT:

SHORT TERM EXPOSURE: irritation

LONG TERM EXPOSURE: same as effects reported in short term exposure

EYE CONTACT:

SHORT TERM EXPOSURE: irritation

LONG TERM EXPOSURE: same as effects reported in short term exposure



INGESTION:

SHORT TERM EXPOSURE: nausea, vomiting, diarrhea, stomach pain

LONG TERM EXPOSURE: same as effects reported in short term exposure

CARCINOGEN STATUS:

OSHA: No

NTP: No

IARC: No

4. FIRST AID MEASURES

INHALATION: If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. Get immediate medical attention.

SKIN CONTACT: Wash skin with soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention, if needed. Thoroughly clean and dry contaminated clothing and shoes before reuse.

EYE CONTACT: Flush eyes with plenty of water for at least 15 minutes. Then get immediate medical attention.

INGESTION: Contact local poison control center or physician immediately. Never make an unconscious person vomit or drink fluids. Give water, milk or activated charcoal slurry. Allow vomiting to occur. When vomiting occurs, keep head lower than hips to help prevent aspiration. If person is unconscious, turn head to side. Get medical attention immediately.

NOTE TO PHYSICIAN: For ingestion, consider gastric lavage.

5. FIRE FIGHTING MEASURES

FIRE AND EXPLOSION HAZARDS: Negligible fire and explosion hazard in bulk form. Dust/air mixtures may ignite or explode.

EXTINGUISHING MEDIA: dolomite, dry powder for metal fires, dry sand, graphite, soda ash, sodium chloride

Do not get water directly on material.

FIRE FIGHTING: Move container from fire area if it can be done without risk. Cool containers with water spray until well after the fire is out. Stay away from the ends of tanks. For fires in cargo or storage area: Cool containers with water from unmanned hose holder or monitor nozzles until well after fire is out. If this is impossible then take the following precautions: Keep unnecessary people away, isolate hazard area and deny entry. Let the fire burn. Use extinguishing agents appropriate for surrounding fire. Avoid inhalation of material or combustion by-products.

LOWER FLAMMABLE LIMIT: 0.19 oz/ft³

6. ACCIDENTAL RELEASE MEASURES

OCCUPATIONAL RELEASE:

Collect spilled material in appropriate container for disposal.

7. HANDLING AND STORAGE

STORAGE: Store and handle in accordance with all current regulations and standards. Store in a cool, dry place. Keep separated from incompatible substances.

8. EXPOSURE CONTROLS, PERSONAL PROTECTION

EXPOSURE LIMITS:

TIN:

TIN AND INORGANIC TIN COMPOUNDS (as Sn):

2 mg/m³ OSHA TWA
2 mg/m³ ACGIH TWA
2 mg/m³ NIOSH recommended TWA 10 hour(s)
2 mg/m³ EC OEL
2 mg/m³ UK WEL TWA
4 mg/m³ UK WEL STEL

MEASUREMENT METHOD: NIOSH IV # 7300, 7301, 7303; OSHA # ID121, ID206

VENTILATION: Provide local exhaust ventilation system. Ensure compliance with applicable exposure limits.

EYE PROTECTION: Eye protection not required under normal conditions.

CLOTHING: Protective clothing is not required under normal conditions.

GLOVES: Protective gloves are not required under normal conditions.

RESPIRATOR: The following respirators and maximum use concentrations are drawn from NIOSH and/or OSHA.

Measurement Element:

Tin (Sn)

10 mg/m³

Any quarter-mask respirator.

20 mg/m³

Any particulate respirator equipped with an N95, R95, or P95 filter (including N95, R95, and P95 filtering facepieces) except quarter-mask respirators. The following filters may also be used: N99, R99, P99, N100, R100 or P100.

Any supplied-air respirator.

50 mg/m³

Any supplied-air respirator operated in a continuous-flow mode.

Any powered, air-purifying respirator with a high-efficiency particulate filter.

100 mg/m³

Any air-purifying, full-facepiece respirator equipped with an N100, R100, or P100 filter.

Any self-contained breathing apparatus with a full facepiece.

Any supplied-air respirator with a full facepiece.

Emergency or planned entry into unknown concentrations or IDLH conditions -

Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode.

Any supplied-air respirator with a full facepiece that is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained breathing apparatus operated in pressure-demand or other positive-pressure mode.

Escape -

Any air-purifying, full-facepiece respirator equipped with an N100, R100, or P100 filter.
Any appropriate escape-type, self-contained breathing apparatus.

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL DESCRIPTION: Odorless, silver-white, lustrous metal in pig, ingot or tub form.

MOLECULAR WEIGHT: 118.69

MOLECULAR FORMULA: SN

BOILING POINT: 4100 F (2260 C)

MELTING POINT: 450 F (232 C)

VAPOR PRESSURE: 1 mmHg @ 1610 C

VAPOR DENSITY: Not applicable

SPECIFIC GRAVITY (water=1): 7.28

WATER SOLUBILITY: insoluble

PH: Not applicable

VOLATILITY: Not applicable

ODOR THRESHOLD: Not available

EVAPORATION RATE: Not applicable

COEFFICIENT OF WATER/OIL DISTRIBUTION: Not available

SOLVENT SOLUBILITY:

Soluble: hydrochloric acid, sulfuric acid, aqua regia, hot potassium hydroxide solutions, alkali

Slightly Soluble: dilute nitric acid, acetic acid

10. STABILITY AND REACTIVITY

REACTIVITY: Stable at normal temperatures and pressure.

CONDITIONS TO AVOID: None reported.

INCOMPATIBILITIES: acids, oxidizing materials, halogens, metal salts, peroxides, bases, metal oxides, metals, combustible materials

TIN:

ACIDS (STRONG): Can produce toxic organic or inorganic tin compounds.

AMMONIUM NITRATE: Forms shock-sensitive mixture.

BICARBONATE POWDER: Violent reaction.

BROMINE (EXCEPT IN HALOCARBON SOLUTION): Violent reaction.

BROMINE TRIFLUORIDE: Violent reaction.

CARBON DIOXIDE: Violent reaction.

CARBON TETRACHLORIDE + WATER: Violent reaction.

CHLORINE (LIQUID): Ignites @ -34 C.

CHLORINE TRIFLUORIDE: Violent reaction and possible ignition.

CUPRIC NITRATE: Possible ignition.

DISULFUR DICHLORIDE: Violent reaction.

FLUORINE: Ignites @ 100 C.

IODINE BROMIDE: Violent reaction.

IODINE HEPTAFLUORIDE: Vigorous exothermic reaction when heated.

PEROXIDE: Oxidation with incandescence may occur.

POTASSIUM PEROXIDE: Incandescent reaction.

POTASSIUM OXIDE: Oxidation with incandescence may occur.

SODIUM PEROXIDE: Incandescent reaction.

SODIUM PEROXIDE + CARBON DIOXIDE: Explodes.

SULFUR: Ignition reaction.
TELLURIUM: Vigorous exothermic reaction.
TURPENTINE: Fire and explosion hazard.

HAZARDOUS DECOMPOSITION:
Thermal decomposition products: oxides of tin

POLYMERIZATION: Will not polymerize.

11. TOXICOLOGICAL INFORMATION

TIN:

TOXICITY DATA: 250 mg/kg unreported-human TDLo

TUMORIGENIC DATA: 395 gm/kg implant-rat TDLo; 840 gm/kg implant-mouse TDLo

HEALTH EFFECTS:

INHALATION:

ACUTE EXPOSURE:

TIN: Inhalation of inorganic tin compounds may cause respiratory irritation. Metal fume fever, an influenza-like illness, may occur due to the inhalation of freshly formed metal oxide particles sized below 1.5 microns and usually between 0.02-0.05 microns. Symptoms may be delayed 4-12 hours and begin with a sudden onset of thirst and a sweet, metallic or foul taste in the mouth. Other symptoms may include upper respiratory tract irritation accompanied by coughing and a dryness of the mucous membranes, lassitude and a generalized feeling of malaise. Fever, chills, muscular pain, mild to severe headache, nausea, occasional vomiting, exaggerated mental activity, profuse sweating, excessive urination, diarrhea, and prostration may also occur. Tolerance to fumes develops rapidly, but is quickly lost. All symptoms usually subside within 24-36 hours.

CHRONIC EXPOSURE:

TIN: Repeated or prolonged exposure to dust or fumes may cause a benign pneumoconiosis without fibrosis.

SKIN CONTACT:

ACUTE EXPOSURE:

TIN: No reported effects in humans from tin dust. Inorganic tin compounds may cause irritation.

CHRONIC EXPOSURE:

TIN: Repeated or prolonged contact with inorganic tin compounds may cause dermatitis.

EYE CONTACT:

ACUTE EXPOSURE:

TIN: Powder may cause moderate irritation.

CHRONIC EXPOSURE:

TIN: Repeated or prolonged exposure to inorganic tin compounds may cause conjunctivitis.

INGESTION:

ACUTE EXPOSURE:

TIN: Relatively non-toxic because of poor absorption. At very high levels, abdominal pain, nausea, vomiting, gastric irritation, and diarrhea may occur.

CHRONIC EXPOSURE:

TIN: Repeated or prolonged ingestion of small quantities may cause abdominal pain, nausea, constipation, and loss of weight.

12. ECOLOGICAL INFORMATION

ECOTOXICITY DATA:

ALGAL TOXICITY: 5000 ug/L 13 day(s) (Biochemical) Green algae (Enteromorpha sp)

FATE AND TRANSPORT:

BIOCONCENTRATION: 5000-60000 ug/L 51 hour(s) BCFD (Residue) Common bay mussel, blue mussel (Mytilus edulis) 0.04 ug/L

13. DISPOSAL CONSIDERATIONS

Dispose in accordance with all applicable regulations.

14. TRANSPORT INFORMATION

U.S. DEPARTMENT OF TRANSPORTATION: No classification assigned.

CANADIAN TRANSPORTATION OF DANGEROUS GOODS: No classification assigned.

LAND TRANSPORT ADR: No classification assigned.

LAND TRANSPORT RID: No classification assigned.

AIR TRANSPORT IATA: No classification assigned.

AIR TRANSPORT ICAO: No classification assigned.

MARITIME TRANSPORT IMDG: No classification assigned.

15. REGULATORY INFORMATION

U.S. REGULATIONS:

CERCLA SECTIONS 102a/103 HAZARDOUS SUBSTANCES (40 CFR 302.4): Not regulated.

SARA TITLE III SECTION 302 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355.30): Not regulated.

SARA TITLE III SECTION 304 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355.40): Not regulated.

SARA TITLE III SARA SECTIONS 311/312 HAZARDOUS CATEGORIES (40 CFR 370.21):

ACUTE: Yes

CHRONIC: No

FIRE: No

REACTIVE: No

SUDDEN RELEASE: No

SARA TITLE III SECTION 313 (40 CFR 372.65): Not regulated.

OSHA PROCESS SAFETY (29CFR1910.119): Not regulated.

STATE REGULATIONS:

California Proposition 65: Not regulated.

CANADIAN REGULATIONS:

WHMIS CLASSIFICATION: Not determined.

EUROPEAN REGULATIONS:

EC CLASSIFICATION (CALCULATED): Not determined.

GERMAN REGULATIONS:

WATER HAZARD CLASS (WGK):

STATE OF CLASSIFICATION: VwVwS

CLASSIFICATION UNDER HAZARD TO WATER: 0

NATIONAL INVENTORY STATUS:

U.S. INVENTORY (TSCA): Listed on inventory.

TSCA 12(b) EXPORT NOTIFICATION: Not listed.

16. OTHER INFORMATION
