Material Safety Data Sheet
Tri-n-butyltin hydride, 97%

ACC# 16212

Section 1 - Chemical Product and Company Identification

MSDS Name: Tri-n-butyltin hydride, 97%
Catalog Numbers: AC215730000, AC215730100, AC215730500
Synonyms: Tributyltin; Tributylstannane; Tributylstannic hydride.
Company Identification:

Acros Organics N.V.
One Reagent Lane
Fair Lawn, NJ 07410

For information in North America, call: 800-ACROS-01
For emergencies in the US, call CHEMTREC: 800-424-9300

Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
688-73-3	Tri-n-butyltin hydride	97	211-704-4

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: almost colorless liquid. Flash Point: 40 deg C.
Warning! Flammable liquid and vapor. May cause eye and skin irritation with possible burns. May cause respiratory and digestive tract irritation and possible burns. May cause central nervous system effects. Air sensitive. Moisture sensitive. Severe marine pollutant.
Target Organs: Central nervous system, respiratory system, eyes, immune system, skin.

Potential Health Effects
Eye: May cause eye irritation. Produces irritation, characterized by a burning sensation, redness, tearing, inflammation, and possible corneal injury.
Skin: Harmful if absorbed through the skin. Effects may be delayed. May produce mucosal lesions. Causes skin irritation and possible burns.
Ingestion: May cause gastrointestinal irritation with nausea, vomiting and diarrhea.
Inhalation: May cause respiratory tract irritation. Causes sore throat, coughing, shortness of breath, and dental corrosion.
Chronic: The critical effect of tributyltin compounds in rats is on the immune system (ACGIH 7th Edition Documentation of the TLVs).

Section 4 - First Aid Measures

Eyes: Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid imme diately.
Skin: Get medical aid immediately. Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Destroy contaminated shoes.
Ingestion: If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid.
Inhalation: Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.
Notes to Physician: Treat symptomatically and supportively.

Section 5 - Fire Fighting Measures

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Use water spray to keep fire-exposed containers cool. Containers may explode in the heat of a fire. Flammable liquid and vapor.
Extinguishing Media: Do NOT use water directly on fire. Do NOT get water inside containers. For small fires, use dry chemical, carbon dioxide, or water spray. For large fires, use dry chemical, carbon dioxide, alcohol-resistant foam, or water spray. Cool containers with flooding quantities of water until well after fire is out.
Flash Point: 40 deg C (104.00 deg F)
Autoignition Temperature: Not available.
Explosion Limits, Lower:N/A
Upper: N/A
NFPA Rating: (estimated) Health: ; Flammability: 2; Instability:

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.
Spills/Leaks: Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. Clean up spills

immediately, observing precautions in the Protective Equipment section. Remove all sources of ignition. Use a spark-proof tool. Provide ventilation.

Section 7 - Handling and Storage

Handling: Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Use only in a well-ventilated area. Avoid contact with eyes, skin, and clothing. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Avoid ingestion and inhalation. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks or open flames.
Storage: Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances. Flammables-area. Store protected from moisture. Store under nitrogen.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.
Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Tri-n-butyltin hydride	0.1 mg/m3 TWA (as Sn) (listed under Tin organic compounds).0.2 mg/m3 STEL (as Sn) (listed under Tin organic compounds).Skin - potential significant contribution to overall exposure by the cutaneous r oute (listed under Tin organic compounds).	0.1 mg/m3 TWA (as Sn, except Cyhexatin) (listed under Tin organic compounds).25 mg/m3 IDLH (as Sn except Cyhexatin) (listed under Tin organic compounds).	0.1 mg/m3 TWA (as Sn) (listed under Tin organic compounds).

OSHA Vacated PELs: Tri-n-butyltin hydride: No OSHA Vacated PELs are listed for this chemical.
Personal Protective Equipment
Eyes: Wear chemical splash goggles.
Skin: Wear appropriate protective gloves to prevent skin exposure.
Clothing: Wear appropriate protective clothing to prevent skin exposure.
Respirators: Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Section 9 - Physical and Chemical Properties

Physical State: Liquid
Appearance: almost colorless
Odor: None reported.
pH: Not available.
Vapor Pressure: 5 mbar @ 20 C
Vapor Density: Not available.
Evaporation Rate: Not available.
Viscosity: 1.5 mPas 20 deg C
Boiling Point: 80 deg C @ .40mm Hg
Freezing/Melting Point: Not available.
Decomposition Temperature:> 250 deg C
Solubility: reacts
Specific Gravity/Density:1.08 g/cm3
Molecular Formula:C12H28Sn
Molecular Weight:291.04

Section 10 - Stability and Reactivity

Chemical Stability: Stable under normal temperatures and pressures.
Conditions to Avoid: Exposure to air, exposure to moist air or water.
Incompatibilities with Other Materials: Strong oxidizing agents.
Hazardous Decomposition Products: Carbon monoxide, carbon dioxide, tin/tin oxides.
Hazardous Polymerization: Has not been reported.

Section 11 - Toxicological Information

RTECS#:
CAS# 688-73-3: WH8675000
LD50/LC50:
Not available.

Carcinogenicity:
CAS# 688-73-3: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

Epidemiology: No information available.
Teratogenicity: No information available.
Reproductive Effects: No information available.

Mutagenicity: No information available.
Neurotoxicity: No information available.
Other Studies:

Section 12 - Ecological Information

Ecotoxicity: No data available. No information available.
Environmental: Terrestrial: Not expected to adsorb into soil. Aquatic: Hydrolyzes rapidly, does not adsorb into sediment. Atmospheric: Remains mostly in the vapor phase. May slightly biodegrade and not expected to bioconcentrate.
Physical: No information available.
Other: Severe marine pollutant.

Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.
RCRA P-Series: None listed.
RCRA U-Series: None listed.

Section 14 - Transport Information

	US DOT	Canada TDG
Shipping Name:	ORGANOMETALLIC SUBSTANCE, LIQUID, WATER-REACTIVE, FLAMMABLE	TOXIC LIQUID FLAMMABLE ORGANIC NO (TRI-N-BUTYLTIN HYDRIDE)
Hazard Class:	4.3	6.1(3)
UN Number:	UN3399	UN2929
Packing Group:	III	II

Section 15 - Regulatory Information

US FEDERAL

TSCA
CAS# 688-73-3 is listed on the TSCA inventory.
Health & Safety Reporting List
None of the chemicals are on the Health & Safety Reporting List.
Chemical Test Rules
None of the chemicals in this product are under a Chemical Test Rule.
Section 12b
None of the chemicals are listed under TSCA Section 12b.
TSCA Significant New Use Rule
None of the chemicals in this material have a SNUR under TSCA.
CERCLA Hazardous Substances and corresponding RQs
None of the chemicals in this material have an RQ.
SARA Section 302 Extremely Hazardous Substances
None of the chemicals in this product have a TPQ.
Section 313 No chemicals are reportable under Section 313.
Clean Air Act:
This material does not contain any hazardous air pollutants.
This material does not contain any Class 1 Ozone depletors.
This material does not contain any Class 2 Ozone depletors.
Clean Water Act:
None of the chemicals in this product are listed as Hazardous Substances under the CWA.
None of the chemicals in this product are listed as Priority Pollutants under the CWA.
None of the chemicals in this product are listed as Toxic Pollutants under the CWA.
OSHA:
None of the chemicals in this product are considered highly hazardous by OSHA.
STATE
CAS# 688-73-3 can be found on the following state right to know lists: California, Minnesota, (listed as Tin organic compounds).

California Prop 65

California No Significant Risk Level: None of the chemicals in this product are listed.

European/International Regulations
European Labeling in Accordance with EC Directives
Hazard Symbols:
T N
Risk Phrases:
R 10 Flammable.
R 21 Harmful in contact with skin.
R 25 Toxic if swallowed.
R 36/38 Irritating to eyes and skin.
R 48/23/25 Toxic : danger of serious damage to health by prolonged exposure through inhalation and if swallowed.
R 50/53 Very toxic to aquatic organisms, may cause long-term

adverse effects in the aquatic environment.

Safety Phrases:

S 35 This material and its container must be disposed of in a safe w ay.
S 36/37/39 Wear suitable protective clothing, gloves and eye/face pr otection.
S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
S 60 This material and its container must be disposed of as hazardou s waste.
S 61 Avoid release to the environment. Refer to special instructions /safety data sheets.

WGK (Water Danger/Protection)

CAS# 688-73-3: No information available.

Canada - DSL/NDSL

CAS# 688-73-3 is listed on Canada's DSL List.

Canada - WHMIS

This product has a WHMIS classification of D1B, D2B.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

Canadian Ingredient Disclosure List

CAS# 688-73-3 is not listed on the Canadian Ingredient Disclosure List.

Section 16 - Additional Information

MSDS Creation Date: 3/16/1998
Revision #3 Date: 4/22/2004