

Advanced Chemistry & Technology

A·C·TECH

7341 Anaconda Avenue, Garden Grove, California 92841 714/ 373-2837 Fax 714/ 373-1913

Material Safety Data Sheet

AC-® 130 Part B

MSDS No: 21300-01

Effective: 10/17/03

Supersedes: 03/20/01

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1. CHEMICAL PRODUCT AND COMPANY INFORMATION

SIN # 834-100

Product ID: AC-130 Part B

Generic Description: Zirconium n-Propoxide

Product Use: Adhesion Promoter

For customer service/technical information, contact:
Advanced Chemistry & Technology, Inc.
7341 Anaconda Ave.
Garden Grove CA 92841 - 2921
714 - 373 - 2837

HAZARD RATINGS		
	HMIS	NFPA
Health	2*	2*
Fire	4	4
Reactivity	1	1
	* = Chronic	

ChemTrec Emergency

1 - 800 - 424 - 9300

2. COMPOSITION/INFORMATION ON INGREDIENTS

COMMON NAME

Zirconium n-Propoxide

n-Propanol

Non - hazardous and other ingredients below reportable levels

CAS

23519-77-9

71-23-8

Proprietary

Approximate % (w/w)

>65

>25

Balance

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: FLAMMABLE LIQUID AND VAPOR. INHALATION MAY CAUSE DIZZINESS, HEADACHE AND LOSS OF COORDINATION. INGESTION CAN CAUSE DIZZINESS, FAINTNESS, HEADACHE AND LOSS OF COORDINATION. MAY CAUSE IMMEDIATE OR DELAYED SEVERE EYE IRRITATION. MAY CAUSE RESPIRATORY TRACT IRRITATION. MAY CAUSE DIGESTIVE TRACT IRRITATION. INGESTION MAY CAUSE NAUSEA, VOMITING, PAIN, UPSET STOMACH, DIARRHEA. INHALATION MAY CAUSE NAUSEA, VOMITING, UPSET STOMACH. PROLONGED OR REPEATED CONTACT MAY CAUSE SKIN IRRITATION. PROLONGED OR REPEATED CONTACT MAY DRY SKIN AND CAUSE IRRITATION. See sections 3, 5, & 6.

PRIMARY ROUTES OF EXPOSURE: Eye. Skin. Inhalation (breathing).

EYE CONTACT: May cause immediate or delayed severe eye irritation. Can cause burning sensation, tearing and redness.

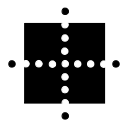
SKIN CONTACT: Prolonged or repeated contact may cause irritation. Prolonged or repeated contact may dry the skin and lead to irritation (i.e. dermatitis).

INHALATION (Breathing): Irritating to the eyes, nose, and respiratory tract. Can cause dizziness, headaches, and loss of coordination. Nausea, vomiting, and stomach upset can occur. Can cause anesthetic and/or narcotic effects.

INGESTION (Swallowing): Irritating to the mouth, throat, and stomach. May cause nausea, vomiting, pain, and stomach upset (e.g., diarrhea). Can cause dizziness. Faintness, headache, and loss of coordination.

TARGET ORGANS/CHRONIC EFFECTS: Lungs and respiratory system. Eyes. Skin.

CONDITIONS AGGRAVATED BY EXPOSURE: Nervous system. Lungs and respiratory system. Skin.



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CARCINOGENICITY:

	ACGIH	IARC	NTP	OSHA
Zirconium n-Propoxide	N	N	N	N
n-Propanol	N	N	N	N

4. FIRST AID MEASURES

EYE CONTACT: Immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention if irritation persists.

SKIN CONTACT: Immediately flush with water. Remove contaminated clothing and shoes. Get medical attention if irritation persists. Professionally wash clothing and shoes before re - use.

INHALATION (Breathing): Remove to fresh air. If symptoms develop, seek immediate medical attention. If not breathing, give artificial respiration.

INGESTION (Swallowing): Seek medical attention. DO NOT induce vomiting. Never give anything by mouth to an unconscious person.

NOTES TO PHYSICIANS: Treatment should be directed at preventing absorption, administering to symptoms (if they occur), and providing supportive therapy.

5. FIRE FIGHTING METHODS

Flash Point:	72°F (22°C)	Method:	
Explosive Limits:	(n-propanol) LEL(%) 2.2	UEL(%)	13.7
Autoignition:	N/A		

HAZARDOUS COMBUSTION AND DECOMPOSITION PRODUCTS: Smoke, soot, and toxic/irritating fumes (i.e., carbon dioxide, carbon monoxide, etc.).

FIRE AND EXPLOSION HAZARDS: High temperatures can cause sealed containers to rupture due to a build up of internal pressure. Cool with water. Vapors can travel to a source of ignition (flame, electric motor, hot surface, cigarette, etc.) and flash back. During a fire, irritating and highly toxic gases may be generated during combustion or decomposition.

EXTINGUISHING MEDIA: SMALL FIRES: Dry chemical, carbon dioxide, halon, water spray, or foam. LARGE FIRES: Water spray, fog, or alcohol foam.

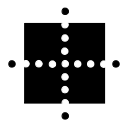
FIRE FIGHTING PROCEDURES/EQUIPMENT: Fire fighters and others who may be exposed to the products of combustion should be equipped with NIOSH - approved positive pressure self - contained breathing apparatus (SCBA) and full protective clothing.

6. ACCIDENTAL RELEASE MEASURES

EVACUATION: Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Eliminate all sources of ignition.

CONTAINMENT: Safely stop discharge. Contain material, as necessary, with a dike or barrier. Stop material from contaminating soil, or from entering sewers or bodies of water.

CLEAN - UP/PERSONAL PROTECTION EQUIPMENT: Appropriate safety measures and protective equipment should be used. Use supplied air respirator or self - contained breathing apparatus in enclosed spaces or if airborne exposure limits can be exceeded. See Section 8.



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COLLECTION AND DISPOSAL: Stop discharge, if safe to do so. Use proper protective equipment. Use non - sparking tools and/or explosion - proof equipment. Stop ignition sources. Cover spills with absorbent clay or sawdust and place in closed chemical waste containers. Dispose of according to applicable local, state and federal regulations.

REPORTING: Spills of this material in excess of a component's RQ must be reported to the National Response Center (1 - 800 - 424 - 8802) and to the appropriate state and local emergency response organizations.

7. HANDLING AND STORAGE

Storage Temperature < 102°F/ 39°C

STORAGE CONDITIONS: Store in cool, dry, well ventilated area away from heat, ignition sources, and direct sunlight. Keep containers tightly closed. **WARNING:** Hot organic chemical vapors or mists can suddenly and without warning combust when mixed with air. Ignition can occur at typical elevated temperature process conditions. Any use in such processes should be evaluated thoroughly to assure safe operating conditions.

TRANSFER: Containers should be supported and grounded before opening, dispensing, mixing, pouring, and emptying. Open with non - sparking tools. If container is warm, open bung slowly to release internal pressure.

PERSONAL HYGIENE: Wash thoroughly after handling, especially before eating, drinking, smoking, and using rest room facilities. Wash contaminated goggles face shield, and gloves. Professionally launder contaminated clothing before re - using.

EMPTY CONTAINER PRECAUTIONS: Attention! This container hazardous when empty. Follow label warnings even after container is emptied since empty containers may retain product residues. Do not use heat, sparks, open flames, torches, cigarettes on or near empty container. Do not reuse empty container without professional cleaning for food, clothing, or products for human or animal consumption or where skin contact can occur.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

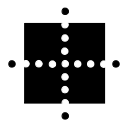
EXPOSURE GUIDELINES:

ACGIH - TLV		
Zirconium n-Propoxide (as Zirconium)	5	mg/m ³
n-Propanol	200	ppm.
ACGIH - STEL		
Zirconium n-Propoxide (as Zirconium)	5	mg/m ³
n-Propanol	250	ppm
OSHA - PEL		
Zirconium n-Propoxide	Not Established	
n-Propanol	200	ppm.
OSHA - STEL		
Zirconium n-Propoxide	Not Established	
n-Propanol	250	ppm

ENGINEERING CONTROLS/VENTILATION: Local exhaust ventilation is recommended when vapors, mists, or dusts can be released in excess of established airborne exposure limits (TLVs or PELs).

EYE PROTECTION: Wear chemical splash goggles. An eye wash facility should be readily available.

SKIN PROTECTION: Wear protective clothing and appropriate impervious gloves. Because a variety of protective gloves exist, consult glove manufacturer to determine the proper type for a specific operation.



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RESPIRATORY PROTECTION: Avoid breathing vapor and/or mists. Wear NIOSH/MSHA - approved equipment. Determine the appropriate type by consulting the respirator manufacturer. High airborne concentrations may necessitate the use of self - contained breathing apparatus (SCBA) or a supplied air respirator. Respiratory protection programs must be in compliance with 29 CFR 1910.134.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Light amber liquid	Odor	Characteristic
Physical State	Liquid	Solubility	Reacts with water
pH	N/A	VOC Material, g/l	318
Specific Gravity, g/cc	1.05	% Non - Vol(w/w)	30
Vapor Density	2.1 (n-Propanol)		

NOTE: The physical data presented above are typical values and should not be construed as a specification.

10. STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable under normal conditions of use.

HAZARDOUS POLYMERIZATION: Will not occur.

CONDITIONS TO AVOID: High temperatures.

INCOMPATIBILITY WITH OTHER MATERIALS: Oxidizers. Acids.

11. TOXICITY INFORMATION

COMPONENTS:

Zirconium n-Propoxide	Not Applicable	
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n-Propanol

LDLo	Oral wmn	5700 mg/kg
LD50	Oral Rat	1870 mg/kg

12. ECOLOGICAL INFORMATION

No data are available on this product.

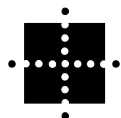
13. DISPOSAL CONSIDERATIONS

DISPOSAL: When a decision is made to discard this material as supplied, it meets RCRA's characteristic definition of ignitability.

GENERAL STATEMENTS: Federal regulations may apply to empty container. State and/or local regulations may be different.

GENERAL RECOMMENDATIONS: Of the methods of disposal currently available, it is recommended that an alternative be selected according to the following order of preference, based upon environmental acceptability: (1) recycle or rework, if feasible; (2) incinerate at an authorized facility; or (3) treat at an acceptable waste treatment facility.

SPECIAL INSTRUCTIONS: Be sure to contact the appropriate government environmental agencies if further guidance is required.



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14. TRANSPORT INFORMATION

Weight (lb.)	Shipping Name	49 CFR	IATA	IMO
	Flammable Liquid, N.O.S. (Contains n-Propanol)	Y	Y	Y
DOT Label	Flammable Liquid	UN/NA Id Number	UN1993	
Hazard Class	3	Packing Group	II	

15. REGULATORY INFORMATION

FEDERAL:

This product is considered hazardous under the OSHA Hazard Communication Standard (29 CFR 1910.1200).

SARA Title III - Section 311/312 - Hazard Categories:

Y - Fire
N - Pressure
N - Reactivity
Y - Acute
Y - Chronic

Ozone - Depleting Chemicals - No regulated ingredients.

SARA Section 302 Extremely Hazardous Mat - No regulated ingredients.

SARA Section 313 Toxic Chemicals - None

TSCA Section 12(b) Export Notification - None

TSCA Section 8(d) Data Reporting Rule - None

CHEMICAL LISTING - Listed on the following Country's Chemical Inventories:

United States Toxic Substance Control Act
Chemical component(s) in this product are on the section 8(b) Chemical
Substance Inventory List (40 CFR 710).

STATE RIGHT - TO - KNOW:

Pennsylvania - New Jersey R - T - K

COMMON NAME

Zirconium n-Propanol

n-Propanol

Non - hazardous and other ingredients below reportable levels

CAS #	Approximate % (w/w)
23519-77-9	>65
71-23-8	>25
Proprietary	Balance

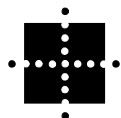
California - California Proposition 65 - No regulated ingredients.

CONEG - No data available.

CANADA:

This is a "controlled product" under the Canadian Workplace Hazardous Materials Information System (WHMIS).
Class B Division 2 Class D Division 2 Sub - division B

CEPA - NPRI



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16. OTHER INFORMATION

USER RESPONSIBILITY: A bulletin such as this cannot be expected to cover all possible individual situations. As the user has the responsibility to provide a safe workplace, all aspects of an individual operation should be examined to determine if, or where, precautions - in addition to those described herein - are required. Any health hazard and safety information herein should be passed on to your customers or employees, as the case may be.

DISCLAIMER OF LIABILITY: The information contained herein is, to the best of our knowledge and belief, accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damages incurred by use of this material. All chemicals may present unknown health hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist. Final determination of suitability of the chemical is the sole responsibility of the user. No representations or warranties, either expressed or implied, of merchantability, fitness for a particular purpose or any other nature are made thereunder with respect to the information contained herein or the chemical to which the information refers. It is the responsibility of the user to comply with all applicable federal, state and local laws and regulations.

End of Material Safety Data Sheet