

# Material Safety Data Sheet

## Zirconyl(IV)-nitrate hydrate

ACC# 57647

### Section 1 - Chemical Product and Company Identification

**MSDS Name:** Zirconyl(IV)-nitrate hydrate

**Catalog Numbers:** AC222630000, AC222630050, AC222631000, AC222635000

**Synonyms:** Zirconyl Nitrate; Bis(Nitrato)-Oxozirconium.

**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
14985-18-3	Zirconyl(IV)-nitrate hydrate	100	unlisted

### Section 3 - Hazards Identification

#### EMERGENCY OVERVIEW

Appearance: white to off-white solid.

**Danger!** Strong oxidizer. Contact with other material may cause a fire. Corrosive. Causes eye and skin burns. May cause severe respiratory tract irritation with possible burns. May cause severe digestive tract irritation with possible burns. Hygroscopic (absorbs moisture from the air).

**Target Organs:** None known.

#### Potential Health Effects

**Eye:** Causes eye burns.

**Skin:** Causes skin burns.

**Ingestion:** May cause severe and permanent damage to the digestive tract. Causes gastrointestinal tract burns.

**Inhalation:** May cause irritation of the respiratory tract with burning pain in the nose and throat, coughing, wheezing, shortness of breath and pulmonary edema. Causes chemical burns to the respiratory tract. Inhalation may be fatal as a result of spasm, inflammation,

edema of the larynx and bronchi, chemical pneumonitis and pulmonary edema.

**Chronic:** No information found.

## Section 4 - First Aid Measures

**Eyes:** Get medical aid immediately. Do NOT allow victim to rub eyes or keep eyes closed. Extensive irrigation with water is required (at least 30 minutes).

**Skin:** Get medical aid immediately. 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:** Do not induce vomiting. 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 immediately.

**Inhalation:** Get medical aid immediately. Remove from exposure and move to fresh air immediately. If breathing is difficult, give oxygen. Do NOT use mouth-to-mouth resuscitation. If breathing has ceased apply artificial respiration using oxygen and a suitable mechanical device such as a bag and a mask.

**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. Strong oxidizer. Contact with other material may cause fire. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Use water with caution and in flooding amounts.

**Extinguishing Media:** Use water only! Do NOT get water inside containers. Contact professional fire-fighters immediately.

**Flash Point:** 100 deg C ( 212.00 deg F)

**Autoignition Temperature:** Not available.

**Explosion Limits, Lower:**Not available.

**Upper:** Not available.

**NFPA Rating:** (estimated) Health: 3; Flammability: 1; Instability: 1; Special Hazard: OX

## Section 6 - Accidental Release Measures

**General Information:** Use proper personal protective equipment as indicated in Section 8.

**Spills/Leaks:** Vacuum or sweep up material and place into a suitable disposal container. Avoid runoff into storm sewers and ditches which lead to waterways. Clean up spills immediately, observing precautions in the Protective Equipment section. Avoid generating

dusty conditions. Remove all sources of ignition. Provide ventilation. Do not get water inside containers.

## Section 7 - Handling and Storage

**Handling:** Wash thoroughly after handling. Minimize dust generation and accumulation. Keep container tightly closed. Avoid contact with clothing and other combustible materials. Do not get on skin or in eyes. Avoid ingestion and inhalation. Use with adequate ventilation. Do not allow contact with water. Use only in a chemical fume hood. Discard contaminated shoes. Keep from contact with moist air and steam.

**Storage:** Keep away from heat, sparks, and flame. Do not store near combustible materials. Store in a cool, dry place. Keep container closed when not in use. Corrosives area. Store protected from moisture.

## 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 ventilation to keep airborne concentrations low.

### Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Zirconyl(IV)-nitrate hydrate	5 mg/m <sup>3</sup> TWA (as Zr) (listed under Zirconium compounds, n.o.s.).10 mg/m <sup>3</sup> STEL (as Zr) (listed under Zirconium compounds, n.o.s.).	5 mg/m <sup>3</sup> TWA (as Zr, except Zirconium tetrachloride) (listed under Zirconium compounds, n.o.s.).50 mg/m <sup>3</sup> IDLH (as Zr, except Zirconium tetrachloride) (listed under Zirconium compounds, n.o.s.).	5 mg/m <sup>3</sup> TWA (as Zr) (listed under Zirconium compounds, n.o.s.).

**OSHA Vacated PELs:** Zirconyl(IV)-nitrate hydrate: No OSHA Vacated PELs are listed for this chemical.

### Personal Protective Equipment

**Eyes:** Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

**Skin:** Wear appropriate protective gloves to prevent skin exposure.

**Clothing:** Wear a chemical apron. Wear appropriate clothing to prevent skin exposure.

**Respirators:** A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant respirator use.

## Section 9 - Physical and Chemical Properties

**Physical State:** Solid  
**Appearance:** white to off-white  
**Odor:** None reported.  
**pH:** Not available.  
**Vapor Pressure:** Not available.  
**Vapor Density:** Not available.  
**Evaporation Rate:** Not available.  
**Viscosity:** Not available.  
**Boiling Point:** Not available.  
**Freezing/Melting Point:** Not available.  
**Decomposition Temperature:** 100 deg C  
**Solubility:** soluble in alcohol  
**Specific Gravity/Density:** Not available.  
**Molecular Formula:** N<sub>2</sub>O<sub>7</sub>Zr.xH<sub>2</sub>O  
**Molecular Weight:** 231.23

## Section 10 - Stability and Reactivity

**Chemical Stability:** Stable.  
**Conditions to Avoid:** Incompatible materials, ignition sources, dust generation, moisture, combustible materials, reducing agents.  
**Incompatibilities with Other Materials:** Reducing agents, moisture.  
**Hazardous Decomposition Products:** Nitrogen oxides, irritating and toxic fumes and gases.  
**Hazardous Polymerization:** Has not been reported.

## Section 11 - Toxicological Information

**RTECS#:**  
**CAS#** 14985-18-3 unlisted.  
**LD50/LC50:**  
Not available.

**Carcinogenicity:**  
CAS# 14985-18-3: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

**Epidemiology:** No information found  
**Teratogenicity:** No information found  
**Reproductive Effects:** No information found

**Mutagenicity:** No information found  
**Neurotoxicity:** No information found  
**Other Studies:**

## Section 12 - Ecological Information

No information available.

## 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
<b>Shipping Name:</b>	OXIDIZING SOLID, CORROSIVE, N.O.S.	ZIRCONIUM NITRATE
<b>Hazard Class:</b>	5.1	5.1
<b>UN Number:</b>	UN3085	UN2728
<b>Packing Group:</b>	III	III

## Section 15 - Regulatory Information

### US FEDERAL

#### TSCA

CAS# 14985-18-3 is not listed on the TSCA inventory. It is for research and development use only.

#### 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**

This material contains Zirconyl(IV)-nitrate hydrate (listed as Water Dissociable Nitrate Compounds), 100%, (CAS# 14985-18-3) which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR

**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# 14985-18-3 can be found on the following state right to know lists: California, (listed as Zirconium compounds, n.o.s.), Minnesota, (listed as Zirconium compounds, n.o.s.).

**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:**

O C

**Risk Phrases:**

R 34 Causes burns.

R 8 Contact with combustible material may cause fire.

**Safety Phrases:**

S 17 Keep away from combustible material.

S 25 Avoid contact with eyes.

S 36/37/39 Wear suitable protective clothing, gloves and eye/face protection.

S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

**WGK (Water Danger/Protection)**

CAS# 14985-18-3: No information available.

**Canada - DSL/NDSL**

None of the chemicals in this product are listed on the DSL or NDSL list.

**Canada - WHMIS**

This product has a WHMIS classification of E.

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# 14985-18-3 (listed as Zirconium compounds, n.o.s.) is listed on the Canadian Ingredient Disclosure List.

## Section 16 - Additional Information

**MSDS Creation Date:** 4/08/1999

**Revision #4 Date:** 3/15/2007

*The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Fisher be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Fisher has been advised of the possibility of such damages.*