Material Safety Data Sheet

Vinylmagnesium chloride, 15 wt% solution in tetrahydrofuran

ACC# 84967

Section 1 - Chemical Product and Company Identification

MSDS Name: Vinylmagnesium chloride, 15 wt% solution in tetrahydrofuran
Catalog Numbers: AC252590000, AC252591000, AC252598000
Synonyms: None.
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
109-99-9	Tetrahydrofuran	85	203-726-8
3536-96-7	Vinylmagnesium chloride	15	222-575-9

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: brown liquid. Flash Point: -17 deg C.
Danger! Highly flammable. Reacts violently and/or explosively with water, steam or moisture. Corrosive. Causes eye and skin burns. Water-reactive. May ignite or explode on contact with moist air. May be harmful if swallowed. May cause severe respiratory tract irritation with possible burns. May cause severe digestive tract irritation with possible burns. May cause central nervous system depression. May form explosive peroxides. May cause liver and kidney damage.
Target Organs: Kidneys, central nervous system, liver.

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. May cause liver and kidney damage.
Inhalation: Causes chemical burns to the respiratory tract. Exposure produces central nervous system depression.
Chronic: May cause liver and kidney damage. Repeated exposure may cause central and peripheral nervous system damage and digestive tract disturbances.

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 not breathing, give artificial respiration. If breathing is difficult, give oxygen. Do NOT use mouth-to-mouth resuscitation.
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. Water reactive. Material will react with water and may release a flammable and/or toxic gas. Use water spray to keep fire-exposed containers cool. Containers may explode in the heat of a fire. Flammable liquid and vapor. Vapors may be heavier than air. They can spread along the ground and collect in low or confined areas. May ignite or explode on contact with steam or moist air.
Extinguishing Media: Use dry sand or earth to smother fire. Do NOT use water directly on fire. Do NOT use carbon dioxide. Contact professional fire-fighters immediately. Cool containers with flooding quantities of water until well after fire is out.
Flash Point: -17 deg C (1.40 deg F)
Autoignition Temperature: 212 deg C (413.60 deg F)
Explosion Limits, Lower:2.0
Upper: 11.0
NFPA Rating: (estimated) Health: 3; Flammability: 3; Instability: 2; Special Hazard: -W-

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. Provide ventilation. Do not expose spill to water.

Section 7 - Handling and Storage

Handling: Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Use only in a well-ventilated area. Do not allow water to get into the container because of violent reaction. Avoid contact with eyes, skin, and clothing. Keep container tightly closed. Avoid ingestion and inhalation. Discard contaminated shoes. Keep from contact with moist air and steam.
Storage: Store in a cool, dry place. Keep container closed when not in use. Keep away from water. Flammables-area. Water free area.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls: Use explosion-proof ventilation equipment. 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
Tetrahydrofuran	50 ppm TWA; 100 ppm STEL; Skin - potential significant contribution to overall exposure by the cutaneous r oute	200 ppm TWA; 590 mg/m3 TWA 2000 ppm IDLH	200 ppm TWA; 590 mg/m3 TWA
Vinylmagnesium chloride	none listed	none listed	none listed

OSHA Vacated PELs: Tetrahydrofuran: 200 ppm TWA; 590 mg/m3 TWA Vinylmagnesium chloride: 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 appropriate protective clothing to minimize contact with skin.
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. 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: brown
Odor: None reported.
pH: Not available.
Vapor Pressure: 200 mbar @ 20 C
Vapor Density: 2.99
Evaporation Rate: Not available.
Viscosity: Not available.
Boiling Point: 66 deg C
Freezing/Melting Point: Not available.
Decomposition Temperature: Not available.
Solubility: reacts
Specific Gravity/Density:.9750g/cm3
Molecular Formula:C2H3ClMg
Molecular Weight:86.81

Section 10 - Stability and Reactivity

Chemical Stability: Prolonged exposure to air and sunlight may form unstable peroxides. Peroxide formation may occur in containers that have been opened and remain in storage. Combines vigorously or explosively with water. Normally stable; however, on long term storage, materials containing similar functional groups form peroxides of unknown stability.
Conditions to Avoid: Incompatible materials, strong oxidants, exposure to moist air or water.
Incompatibilities with Other Materials: Bases, acids (mineral, non-oxidizing, e.g. hydrochloric acid, hydrofluoric acid, muriatic acid, phosphoric acid), acids (mineral, oxidizing, e.g. chromic acid, hypochlorous acid, nitric acid, sulfuric acid), strong oxidizing agents, strong reducing agents.
Hazardous Decomposition Products: Irritating and toxic fumes and gases.
Hazardous Polymerization: Has not been reported.

Section 11 - Toxicological Information

RTECS#:
CAS# 109-99-9: LU5950000
CAS# 3536-96-7 unlisted.

LD50/LC50:
CAS# 109-99-9:
Inhalation, rat: LC50 = 21000 ppm/3H;
Oral, rat: LD50 = 1650 mg/kg;
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CAS# 3536-96-7:
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Carcinogenicity:
CAS# 109-99-9:

- **ACGIH:** A3 - Confirmed animal carcinogen with unknown relevance to humans
- **California:** Not listed.
- **NTP:** Not listed.
- **IARC:** Not listed.

CAS# 3536-96-7: 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. Cas# 109-99-9:LC50 Pimephales promelas (fathead minnow) 2160 mg/l 96 hr flow-through bioassay, wt 0.12 g, water hardness 45.5 mg/l CaCO3, temp:25 +/- 1 deg C, pH 7.5, dissolved oxygen greater than 60% of saturation.
Environmental: Will volatilize into the atmosphere. If released to the atmosphere, tetrahydrofuran will exist solely in the vapor phase and is degraded in the atmosphere by reaction with photochemically-produced hydroxyl radicals and nitrate radicals with half-lives of about 1 and 3 days, respectively. Measured Koc values of 23 and 18 indicate that tetrahydrofuran will have very high mobility in soil.
Physical: Tetrahydrofuran is not expected to adsorb to suspended matter in the water based on its measured Koc values. This compound should volatilize from water surfaces. An estimated BCF value of 1 suggests that tetrahydrofuran will not bioconcentrate in aquatic organisms.
Other: 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:
CAS# 109-99-9: waste number U213 (Ignitable waste).

Section 14 - Transport Information

	US DOT	Canada TDG
Shipping Name:	COMPOUND DISPERSION, WATER-REACTIVE, FLAMMABLE, N.O.S.	WATER-REACTIVE SOLID NOS (VINYLMAGNESIUM CHLORIDE)
Hazard Class:	4.3	4.3
UN Number:	UN3207	UN2813
Packing Group:	I	I

Section 15 - Regulatory Information

US FEDERAL

TSCA
CAS# 109-99-9 is listed on the TSCA inventory.
CAS# 3536-96-7 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
CAS# 109-99-9: Testing required by manufacturers, processors; Test for Health Effects
Section 12b
CAS# 109-99-9: Section 4
TSCA Significant New Use Rule
None of the chemicals in this material have a SNUR under TSCA.
CERCLA Hazardous Substances and corresponding RQs
CAS# 109-99-9: 1000 lb final RQ; 454 kg final RQ
SARA Section 302 Extremely Hazardous Substances
None of the chemicals in this product have a TPQ.
SARA Codes

CAS # 109-99-9: immediate, fire, reactive.

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# 109-99-9 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts.

CAS# 3536-96-7 is not present on state lists from CA, PA, MN, MA, FL, or NJ.

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:

F C

Risk Phrases:

R 11 Highly flammable.
R 15 Contact with water liberates extremely flammable gases.
R 34 Causes burns.

Safety Phrases:

S 16 Keep away from sources of ignition - No smoking.
S 30 Never add water to this product.
S 7/8 Keep container tightly closed and dry.
S 43B In case of fire, use fire-fighting equipment on basis of sodiu
m chloride, sodium bicarbonate (never use water).

WGK (Water Danger/Protection)

CAS# 109-99-9: 1
CAS# 3536-96-7: No information available.

Canada - DSL/NDSL

CAS# 109-99-9 is listed on Canada's DSL List.

Canada - WHMIS

This product has a WHMIS classification of B2, B6, 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# 109-99-9 is listed on the Canadian Ingredient Disclosure List.

Section 16 - Additional Information

MSDS Creation Date: 6/03/1999
Revision #6 Date: 3/22/2006