Material Safety Data Sheet

Phenylmagnesium chloride, 25 wt% solution in tetrahydrofuran

ACC# 00858

Section 1 - Chemical Product and Company Identification

MSDS Name: Phenylmagnesium chloride, 25 wt% solution in tetrahydrofuran
Catalog Numbers: AC252580000, AC252581000, AC252588000
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	75	203-726-8
100-59-4	Phenylmagnesium chloride	25	202-868-8

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: yellow-brown liquid. Flash Point: -17 deg C.
Danger! Highly flammable. Corrosive. Causes eye and skin burns. Uninhibited material, or material from which the inhibitor has been removed or reacted, may form explosive peroxides. May be harmful if swallowed. May cause severe digestive tract irritation with possible burns. May cause severe respiratory tract irritation with possible burns. May cause central nervous system depression. Moisture sensitive.
Target Organs: Central nervous system.

Potential Health Effects

Eye: Causes eye burns.
Skin: Causes skin burns. Prolonged and/or repeated contact may cause irritation and/or dermatitis.
Ingestion: May cause severe and permanent damage to the digestive tract. Causes gastrointestinal tract burns. May be harmful if swallowed.
Inhalation: Causes chemical burns to the respiratory tract. Exposure produces central nervous system depression. Vapors may cause dizziness or suffocation.
Chronic: Prolonged or repeated skin contact may cause dermatitis.

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: Never give anything by mouth to an unconscious person. Get medical aid immediately. Do NOT induce vomiting. If conscious and alert, rinse mouth and drink 2-4 cupfuls of milk or water.
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. Vapors may form an explosive mixture with air. Vapors can travel to a source of ignition and flash back. 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. Extremely flammable liquid and vapor. 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. Will be easily ignited by heat, sparks or flame.
Extinguishing Media: For small fires, use dry chemical, carbon dioxide, water spray or alcohol-resistant foam. For large fires, use water spray, fog, or alcohol-resistant foam. Do NOT use water directly on fire. Use water spray to cool fire-exposed containers. Water may be ineffective. Use agent most appropriate to extinguish fire. Do NOT use straight streams of water.
Flash Point: -17 deg C (1.40 deg F)
Autoignition Temperature: Not available.
Explosion Limits, Lower:N/A
Upper: N/A
NFPA Rating: (estimated) Health: 3; Flammability: 3; Instability: 0

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. A vapor suppressing foam may be used to reduce vapors.

Section 7 - Handling and Storage

Handling: Wash thoroughly after handling. Use only in a well-ventilated area. Ground and bond containers when transferring material. Avoid contact with eyes, skin, and clothing. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Keep container tightly closed. Keep away from heat, sparks and flame. Avoid ingestion and inhalation. Discard contaminated shoes. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks or open flames.
Storage: Keep away from heat, sparks, and flame. Keep away from sources of ignition. Keep container closed when not in use. Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances. Flammables-area. Water free area.

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
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
Phenylmagnesium chloride	none listed	none listed	none listed

OSHA Vacated PELs: Tetrahydrofuran: 200 ppm TWA; 590 mg/m3 TWA Phenylmagnesium 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 prevent skin exposure.
Respirators: Wear a NIOSH/MSHA or European Standard EN 149 approved full-facepiece airline respirator in the positive pressure mode with emergency escape provisions.

Section 9 - Physical and Chemical Properties

Physical State: Liquid
Appearance: yellow-brown
Odor: None reported.
pH: Not available.
Vapor Pressure: Not available.
Vapor Density: 4.7
Evaporation Rate: Not available.
Viscosity: Not available.
Boiling Point: Not available.
Freezing/Melting Point:approx -100C
Decomposition Temperature: Not available.
Solubility: Slightly soluble.
Specific Gravity/Density:1.0420g/cm3
Molecular Formula:C6H5ClMg
Molecular Weight:136.87

Section 10 - Stability and Reactivity

Chemical Stability: Prolonged exposure to air and sunlight may form unstable peroxides. Explosive peroxides may form on concentration. Peroxides can be detonated by friction, impact, or heating. Peroxide formation may occur in containers that have been opened and remain in storage. Normally stable; however, on long term storage, materials containing similar functional groups form peroxides of unknown stability.
Conditions to Avoid: Incompatible materials, ignition sources, dust generation, excess heat, strong oxidants.
Incompatibilities with Other Materials: Strong oxidizing agents, acids, acid chlorides.
Hazardous Decomposition Products: Hydrogen chloride, carbon monoxide, irritating and toxic fumes and gases, carbon dioxide.
Hazardous Polymerization: Has not been reported.

Section 11 - Toxicological Information

RTECS#:

CAS# 109-99-9: LU5950000
CAS# 100-59-4 unlisted.
LD50/LC50:
CAS# 109-99-9:
Inhalation, rat: LC50 = 21000 ppm/3H;
Oral, rat: LD50 = 1650 mg/kg;
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CAS# 100-59-4:
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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# 100-59-4: 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# 109-00-0:LC50(96Hr.) Fathead Minnow = 2160 mg/L
Environmental: Terrestrial: THF is highly mobile in soil and will leach. Aquatic: THF will not absorb into suspended solids but is rapidly volatilized. Atmospheric: THF remains in the vapor phase with a half-life up to three days. Aerobically biodegrades but resistant anareobically. No bioconcentration.
Physical: According to a model of gas/particle partitioning of semivolatile organic compounds in the atmosphere, tetrahydrofuran, which has a vapor pressure of 162 mm Hg at 25 deg C, determined from experimentally-derived coefficients, will exist solely as a vapor in the ambient atmosphere. Vapor-phase tetrahydrofuran is degraded in the atmosphere by reaction with photochemically-produced hydroxyl radicals and nitrate radicals; the half-lives for these reactions in air are estimated to be about 1 day and 3 days, respectively
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:	FLAMMABLE LIQUIDS, N.O.S.	FLAMMABLE LIQUID NOS (TETRAHYDROFURAN SOLUTION)
Hazard Class:	3	3
UN Number:	UN1993	UN1993
Packing Group:	II	II
Additional Info:		FP -14C

Section 15 - Regulatory Information

US FEDERAL

TSCA
CAS# 109-99-9 is listed on the TSCA inventory.
CAS# 100-59-4 is listed on the TSCA inventory.
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# 100-59-4 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 14 Reacts violently with water.
R 34 Causes burns.

Safety Phrases:

S 30 Never add water to this product.
S 36/37/39 Wear suitable protective clothing, gloves and eye/face pr
otection.
S 7/8 Keep container tightly closed and dry.
S 43A In case of fire, use dry chemical (never use water).

WGK (Water Danger/Protection)

CAS# 109-99-9: 1
CAS# 100-59-4: No information available.

Canada - DSL/NDSL

CAS# 109-99-9 is listed on Canada's DSL List.
CAS# 100-59-4 is listed on Canada's DSL List.

Canada - WHMIS

This product has a WHMIS classification of B2, D2B, 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# 109-99-9 is listed on the Canadian Ingredient Disclosure List.

Section 16 - Additional Information

MSDS Creation Date: 6/02/1999
Revision #5 Date: 3/22/2006