Material Safety Data Sheet
Collodion, flexible

ACC# 00463

Section 1 - Chemical Product and Company Identification

**MSDS Name:** Collodion, flexible  
**Catalog Numbers:** AC405350000, AC405355000, AC405355001  
**Synonyms:** Nitrocellulose.  
**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

<table>
<thead>
<tr>
<th>CAS#</th>
<th>Chemical Name</th>
<th>Percent</th>
<th>EINECS/ELINCS</th>
</tr>
</thead>
<tbody>
<tr>
<td>60-29-7</td>
<td>Ether</td>
<td>70 - 75</td>
<td>200-467-2</td>
</tr>
<tr>
<td>64-17-5</td>
<td>Ethanol</td>
<td>20 - 25</td>
<td>200-578-6</td>
</tr>
<tr>
<td>9004-70-0</td>
<td>Collodion</td>
<td>4 - 8</td>
<td>unlisted</td>
</tr>
<tr>
<td>8001-79-4</td>
<td>Castor oil</td>
<td>5</td>
<td>232-293-8</td>
</tr>
</tbody>
</table>

Section 3 - Hazards Identification

**EMERGENCY OVERVIEW**

Appearance: clear colorless to light yellow liquid. Flash Point: -52 deg C.  
**Danger!** Extremely flammable liquid and vapor. Vapor may cause flash fire.  
Harmful if swallowed. Causes eye, skin, and respiratory tract irritation. Breathing vapors may cause drowsiness and dizziness. Repeated exposure may cause skin dryness or cracking. Aspiration hazard if swallowed. Can enter lungs and cause damage. May cause central nervous system depression. May form explosive peroxides. May cause liver and kidney damage.  
**Target Organs:** Blood, kidneys, central nervous system, liver, spleen, respiratory system, gastrointestinal system, eyes, thyroid, skin.

Potential Health Effects  
Eye: Causes eye irritation.
**Skin:** Causes skin irritation. May be harmful if absorbed through the skin. Repeated or prolonged exposure may cause drying and cracking of the skin.

**Ingestion:** Harmful if swallowed. Aspiration hazard. May cause gastrointestinal irritation with nausea, vomiting and diarrhea. May cause central nervous system depression, characterized by excitement, followed by headache, dizziness, drowsiness, and nausea. Advanced stages may cause collapse, unconsciousness, coma and possible death due to respiratory failure. Aspiration of material into the lungs may cause chemical pneumonitis, which may be fatal. May cause lung damage.

**Inhalation:** Causes respiratory tract irritation. May be harmful if inhaled. Exposure to high concentrations may produce narcosis, nausea and loss of consciousness. Inhalation of vapors may cause drowsiness and dizziness.

**Chronic:** May cause liver and kidney damage. Repeated exposure may cause damage to the spleen. Laboratory experiments have resulted in mutagenic effects. May cause thyroid abnormalities. Chronic exposure may cause blood effects. Adverse reproductive effects have been reported in humans. Animal studies have reported the development of tumors.

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**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 immediately.

**Skin:** Get medical aid immediately. Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.

**Ingestion:** Potential for aspiration if swallowed. Get medical aid immediately. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If vomiting occurs naturally, have victim lean forward.

**Inhalation:** Get medical aid immediately. Remove from exposure and move to fresh air immediately. If breathing is difficult, give oxygen. Possible aspiration hazard. Do not use mouth-to-mouth resuscitation if victim ingested or inhaled the substance; induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.

**Notes to Physician:** Treat symptomatically and supportively.

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**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. Will burn if involved in a fire. Extremely flammable. Material will readily ignite at room temperature. Containers may explode in the heat of a fire. May form explosive peroxides. May re-ignite after fire is extinguished. Vapors are heavier than air and may travel to a source of ignition and flash back. Vapors can spread along the ground and collect in low or confined areas. This liquid floats on water and may travel to a source of ignition and spread fire.
**Extinguishing Media:** For small fires, use dry chemical, carbon dioxide, water spray or alcohol-resistant foam. Water may be ineffective. Water may spread fire. If water is the only media available, use in flooding amounts. For large fires, use water spray, fog or alcohol-resistant foam. Do NOT use straight streams of water. Cool containers with flooding quantities of water until well after fire is out.

**Flash Point:** -52 deg C ( -61.60 deg F)

**Autoignition Temperature:** 170 deg C ( 338.00 deg F)

**Explosion Limits, Lower:** 17 Vol %

**Upper:** 36 Vol %

**NFPA Rating:** (estimated) Health: 2; Flammability: 4; Instability: 3

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**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. Wear a self contained breathing apparatus and appropriate personal protection. (See Exposure Controls, Personal Protection section). Remove all sources of ignition. Use a spark-proof tool. Evacuate unnecessary personnel. Do not let this chemical enter the environment.

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**Section 7 - Handling and Storage**

**Handling:** Use spark-proof tools and explosion proof equipment. Do not get in eyes, on skin, or on clothing. Take precautionary measures against static discharges. Keep away from heat, sparks and flame. Do not ingest or inhale. Use only in a chemical fume hood. If peroxide formation is suspected, do not open or move container.

**Storage:** Store in a cool, dry place. Store in a tightly closed container. Flammables-area. Containers should be dated when opened and tested periodically for the presence of peroxides. Should crystals form in a peroxidizable liquid, peroxidation may have occurred and the product should be considered extremely dangerous. In this instance, the container should only be opened remotely by professionals. Store at room temperature or below. Do not exceed 86°F. Do not open unless contents are at 72°F or below for at least 24 hours. Ethyl ether may form explosive peroxides on long standing or after exposure to air or light. All peroxidizable substances should be stored away from heat and light and be protected from ignition sources. May form explosive peroxides on prolonged storage.

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**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 only under a chemical fume hood.

**Exposure Limits**

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>ACGIH</th>
<th>NIOSH</th>
<th>OSHA - Final PELs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ether</td>
<td>400 ppm TWA; 500 ppm STEL</td>
<td>1900 ppm IDLH (10% LEL)</td>
<td>400 ppm TWA; 1200 mg/m3 TWA</td>
</tr>
<tr>
<td>Ethanol</td>
<td>1000 ppm TWA</td>
<td>1000 ppm TWA; 1900 mg/m3 TWA 3300 ppm IDLH (10% LEL)</td>
<td>1000 ppm TWA; 1900 mg/m3 TWA</td>
</tr>
<tr>
<td>Collodion</td>
<td>none listed</td>
<td>none listed</td>
<td>none listed</td>
</tr>
<tr>
<td>Castor oil</td>
<td>none listed</td>
<td>none listed</td>
<td>none listed</td>
</tr>
</tbody>
</table>

**OSHA Vacated PELs:** Ether: 400 ppm TWA; 1200 mg/m3 TWA Ethanol: 1000 ppm TWA; 1900 mg/m3 TWA Collodion: No OSHA Vacated PELs are listed for this chemical. Castor oil: 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:** 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.

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**Section 9 - Physical and Chemical Properties**

**Physical State:** Liquid

**Appearance:** viscous - clear colorless to light yellow

**Odor:** ether odor.

**pH:** Not available.

**Vapor Pressure:** 576 hPa @ 20 deg C

**Vapor Density:** Not available.

**Evaporation Rate:** Not available.

**Viscosity:** Not available.

**Boiling Point:** 34 deg C @ 760 mmHg

**Freezing/Melting Point:** Not available.

**Decomposition Temperature:** Not available.

**Solubility:** Not available.

**Specific Gravity/Density:** 0.783

**Molecular Formula:** Not applicable.

**Molecular Weight:** Not available.

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**Section 10 - Stability and Reactivity**
**Chemical Stability:** May form explosive peroxides. Light sensitive. Under normal storage conditions, peroxidizable compounds can form and accumulate peroxides which may explode when subjected to heat or shock. This material is most hazardous when peroxide levels are concentrated by distillation or evaporation.

**Conditions to Avoid:** Incompatible materials, light, ignition sources, heat.

**Incompatibilities with Other Materials:** Strong oxidizing agents, strong acids.

**Hazardous Decomposition Products:** Carbon monoxide, carbon dioxide, peroxides.

**Hazardous Polymerization:** Has not been reported.

### Section 11 - Toxicological Information

**RTECS#:**
- CAS# 60-29-7: KI5775000
- CAS# 64-17-5: KQ6300000
- CAS# 9004-70-0: QW0970000
- CAS# 8001-79-4: FI4100000

**LD50/LC50:**

**CAS# 60-29-7:**
- Draize test, rabbit, eye: 100 mg Moderate;
- Inhalation, mouse: LC50 = 31000 ppm/30M;
- Oral, mouse: LD50 = 1760 mg/kg;
- Oral, rat: LD50 = 1215 mg/kg;
- Skin, rabbit: LD50 = >20 mL/kg;

**CAS# 64-17-5:**
- Draize test, rabbit, eye: 500 mg Severe;
- Draize test, rabbit, eye: 500 mg/24H Mild;
- Draize test, rabbit, skin: 20 mg/24H Moderate;
- Inhalation, mouse: LC50 = 39 gm/m3/4H;
- Inhalation, rat: LC50 = 20000 ppm/10H;
- Oral, mouse: LD50 = 3450 mg/kg;
- Oral, rabbit: LD50 = 6300 mg/kg;
- Oral, rat: LD50 = 7060 mg/kg;
- Oral, rat: LD50 = 9000 mg/kg;

**CAS# 9004-70-0:**
- Oral, mouse: LD50 = >5 gm/kg;
- Oral, rat: LD50 = >5 gm/kg;

**CAS# 8001-79-4:**
- Draize test, rabbit, eye: 500 mg Mild;
- Draize test, rabbit, skin: 100 mg/24H Severe;
Carcinogenicity:
CAS# 60-29-7: Not listed by ACGIH, IARC, NTP, or CA Prop 65.
CAS# 64-17-5:
- ACGIH: Not listed.
- California: Not listed.
- NTP: Not listed.
- IARC: Group 1 carcinogen

CAS# 9004-70-0: Not listed by ACGIH, IARC, NTP, or CA Prop 65.
CAS# 8001-79-4: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

Epidemiology: Tumorigenic effects have been reported in experimental animals.
Teratogenicity: Teratogenic effects have occurred in humans.
Reproductive Effects: Adverse reproductive effects have occurred in humans.
Mutagenicity: Mutagenic effects have occurred in humans.
Neurotoxicity: No information found
Other Studies:

Section 12 - Ecological Information

Ecotoxicity: Fish: Fathead Minnow: LC50 = 2600 mg/L; 96 Hr; CAS# 60-29-7: Flow-through bioassayFish: Bluegill/Sunfish: LC50 >10000 mg/L; 96 Hr; CAS# 60-29-7: Static bioassayBacteria: Phytobacterium phosphoreum: EC50 = 5625 mg/L; 15 min; CAS# 60-29-7: Microtox test CAS# 60-29-7: If ethyl ether is released to soil, it will be subject to volatilization. It will be expected to exhibit high mobility in soil and, therefore, it may leach to groundwater. If ethyl ether is released to water, it will not be expected to significantly adsorb to sediment or suspended particulate matter, bioconcentrate in aquatic organisms or hydrolyze.
Environmental: CAS# 60-29-7: Ethyl ether will not significantly photooxidize via reaction with photochemically produced hydroxyl radicals in the water. Ethyl ether in surface water will be subject to rapid volatilization with estimated half-lives of 3.1 hr and 1.5 days. It will not be expected to hydrolyze in water or soil. If ethyl ether is released to the atmosphere, it will be expected to exist almost entirely in the vapor phase. It will be susceptible to photooxidation via vapor phase reaction with photochemically produced hydroxyl radicals with a half-life of 29 hours.
Physical: No information available.
Other: Do not empty into drains.

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# 60-29-7: waste number U117 (Ignitable waste).

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### Section 14 - Transport Information

<table>
<thead>
<tr>
<th></th>
<th>US DOT</th>
<th>Canada TDG</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Shipping Name:</strong></td>
<td>NITROCELLULOSE, SOLUTION, FLAMMABLE</td>
<td>NITROCELLULOSE, SOLUTION, FLAMMABLE</td>
</tr>
<tr>
<td><strong>Hazard Class:</strong></td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td><strong>UN Number:</strong></td>
<td>UN2059</td>
<td>UN2059</td>
</tr>
<tr>
<td><strong>Packing Group:</strong></td>
<td>I</td>
<td>I</td>
</tr>
</tbody>
</table>

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### Section 15 - Regulatory Information

**US FEDERAL**

**TSCA**
CAS# 60-29-7 is listed on the TSCA inventory.
CAS# 64-17-5 is listed on the TSCA inventory.
CAS# 9004-70-0 is listed on the TSCA inventory.
CAS# 8001-79-4 is listed on the TSCA inventory.

**Health & Safety Reporting List**
None of the chemicals are on the Health & Safety Reporting List.

**Chemical Test Rules**
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**
CAS# 60-29-7: 100 lb final RQ; 45.4 kg final RQ

**SARA Section 302 Extremely Hazardous Substances**
None of the chemicals in this product have a TPQ.

**SARA Codes**
CAS # 60-29-7: immediate, fire, sudden release of pressure, reactive.
CAS # 64-17-5: immediate, delayed, fire.
CAS # 9004-70-0: 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 depleters.
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:**
CAS# 9004-70-0 is considered highly hazardous by OSHA.

**STATE**
CAS# 60-29-7 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts.
CAS# 64-17-5 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts.
CAS# 9004-70-0 can be found on the following state right to know lists: New Jersey, Pennsylvania, Massachusetts.
CAS# 8001-79-4 is not present on state lists from CA, PA, MN, MA, FL, or NJ.

**California Prop 65**
WARNING: This product contains Ethanol, a chemical known to the state of California to cause developmental reproductive toxicity.
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:**
XN F+

**Risk Phrases:**
R 12 Extremely flammable.
R 19 May form explosive peroxides.
R 22 Harmful if swallowed.
R 66 Repeated exposure may cause skin dryness or cracking.
R 67 Vapours may cause drowsiness and dizziness.

**Safety Phrases:**
S 16 Keep away from sources of ignition - No smoking.
S 29 Do not empty into drains.
S 33 Take precautionary measures against static discharges.
S 9 Keep container in a well-ventilated place.

**WGK (Water Danger/Protection)**
CAS# 60-29-7: 1
CAS# 64-17-5: 0
CAS# 9004-70-0: 0
CAS# 8001-79-4: 1

**Canada - DSL/NDSL**
CAS# 60-29-7 is listed on Canada's DSL List.
CAS# 64-17-5 is listed on Canada's DSL List.
CAS# 9004-70-0 is listed on Canada's DSL List.
CAS# 8001-79-4 is listed on Canada's DSL List.

**Canada - WHMIS**
This product has a WHMIS classification of B2, D1B, D2B, F. 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# 60-29-7 is listed on the Canadian Ingredient Disclosure List.
- CAS# 64-17-5 is listed on the Canadian Ingredient Disclosure List.
- CAS# 8001-79-4 is listed on the Canadian Ingredient Disclosure List.

### Section 16 - Additional Information

**MSDS Creation Date:** 6/02/1999  
**Revision #7 Date:** 5/30/2008

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.