Material Safety Data Sheet
4-Chlorophenyl Isocyanate (Pract)

ACC# 09620

Section 1 - Chemical Product and Company Identification

MSDS Name: 4-Chlorophenyl Isocyanate (Pract)
Catalog Numbers: AC404980000, AC404981000
Synonyms: P-Chlorophenyl Isocyanate; 4-Chloroisocyanatobenzene; 1-Chloro-4-Isocyanatobenzene.
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
104-12-1	4-Chlorophenyl Isocyanate	ca. 100%	203-176-9

Hazard Symbols: T
Risk Phrases: 23/24/25 36/37/38

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: white crystals. Moisture sensitive. May cause central nervous system depression. May cause lung damage. May cause liver and kidney damage. **Warning!** Causes eye and skin irritation. May cause digestive tract irritation. Causes respiratory tract irritation. Lachrymator (substance which increases the flow of tears). Harmful if inhaled or swallowed. May cause cardiac disturbances. Possible sensitizer.
Target Organs: Kidneys, central nervous system, liver, lungs, cardiovascular system.

Potential Health Effects
Eye: Produces irritation, characterized by a burning sensation, redness, tearing, inflammation, and possible corneal injury. Lachrymator (substance which increases the flow of tears). May cause conjunctivitis, ulceration and turbidity of the cornea.
Skin: Causes skin irritation. May cause skin sensitization, an allergic reaction, which becomes evident upon re-exposure to this material.
Ingestion: Harmful if swallowed. May cause gastrointestinal irritation with nausea, vomiting and diarrhea. May cause liver and kidney damage. May cause cardiac disturbances. May cause central nervous system depression.
Inhalation: Causes respiratory tract irritation. May cause liver and kidney damage. Exposure produces central nervous system depression. At high concentrations, isocyanates affect mucous membranes of the respiratory tract and may lead to fatal pulmonary edema. Exposure to low and often even unmeasurable isocyanate concentration results in sensitization. May cause cardiac abnormalities.
Chronic: May cause liver and kidney damage. Effects may be delayed. May cause lung damage. Repeated or prolonged exposure may cause allergic reactions in sensitive individuals. Inhalation of product may aggravate existing chronic repiratory problems such as asthma, emphysema or bronchitis.

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. Do NOT allow victim to rub or keep eyes closed.
Skin: Get medical aid immediately. Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse.
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 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: For ingestion, the stomach sould be intubated, aspirated, and lavaged with a slurry of activated charcoal--protect the airway from aspiration of gastric contents. 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. Containers may explode when heated. Runoff from fire control or dilution water may cause pollution.
Extinguishing Media: For large fires, use water spray, fog, or alcohol-resistant foam. Do NOT get water inside containers. Do NOT use straight streams of water. For small fires, use carbon dioxide, dry chemical, dry sand, or alcohol-resistant foam. Most foams will react with the material and release corrosive/toxic gases. Cool containers with flooding quantities of water until well after fire is out.
Flash Point: 110 deg C (230.00 deg F)
Autoignition Temperature: > 450 deg C (> 842.00 deg F)

Explosion Limits, Lower: Not available.
Upper: Not available.
NFPA Rating: (estimated) Health: 2; Flammability: 1; Instability: 0

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. Clean up spills immediately, observing precautions in the Protective Equipment section. Avoid generating dusty conditions. Provide ventilation. Do not get water inside containers.

Section 7 - Handling and Storage

Handling: Minimize dust generation and accumulation. Avoid contact with eyes, skin, and clothing. Keep container tightly closed. Avoid ingestion and inhalation. Use with adequate ventilation. Do not allow contact with water. Wash clothing before reuse. Discard contaminated shoes. Keep from contact with moist air and steam.
Storage: Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances. 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
4-Chlorophenyl Isocyanate	none listed	none listed	none listed

OSHA Vacated PELs: 4-Chlorophenyl Isocyanate: 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: Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Always use a NIOSH or European Standard EN 149 approved respirator when necessary.

Section 9 - Physical and Chemical Properties

Physical State: Crystals
Appearance: white
Odor: none reported
pH: Not available.
Vapor Pressure: 95.4 mm Hg @20 deg. C
Vapor Density: Not available.
Evaporation Rate: Not available.
Viscosity: Not available.
Boiling Point: 203-204 deg C @760.0mmHg
Freezing/Melting Point:29.00-31.00 deg C
Decomposition Temperature: Not available.
Solubility: Not available.
Specific Gravity/Density:1.2000g/cm3
Molecular Formula:C7H4ClNO
Molecular Weight:153.4871

Section 10 - Stability and Reactivity

Chemical Stability: Stable at room temperature in closed containers under normal storage and handling conditions.
Conditions to Avoid: Incompatible materials, dust generation, moisture, excess heat, strong oxidants.
Incompatibilities with Other Materials: Moisture, acids, alcohols, amines, heat, oxidizing agents, strong bases.
Hazardous Decomposition Products: Hydrogen chloride, hydrogen cyanide, nitrogen oxides, carbon monoxide, carbon dioxide, nitrogen, hydrocarbons.
Hazardous Polymerization: Has not been reported.

Section 11 - Toxicological Information

RTECS#:
CAS# 104-12-1: NQ8575000
LD50/LC50:
CAS# 104-12-1:

Draize test, rabbit, eye: 100 mg/24H Severe;
Draize test, rabbit, skin: 20 mg/24H Moderate;
Inhalation, mouse: LC50 = 53 mg/m3;
Inhalation, rat: LC50 = 113 mg/m3/4H;
Oral, mouse: LD50 = 450 mg/kg;
Oral, rat: LD50 = 138 mg/kg;

Carcinogenicity:
CAS# 104-12-1: Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.
Epidemiology: No information found.
Teratogenicity: No information found.
Reproductive Effects: No information found.
Neurotoxicity: No information found.
Mutagenicity: No information found.
Other Studies: No data available.

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	IATA	RID/ADR	IMO	Canada TDG
Shipping Name:	ISOCYANATES, TOXIC, N.O.S.				No information available.
Hazard Class:	6.1				
UN Number:	UN2206				
Packing Group:	II				

Section 15 - Regulatory Information

US FEDERAL

TSCA
CAS# 104-12-1 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.
SARA

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 4-Chlorophenyl Isocyanate (CAS# 104-12-1, 100%),which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.
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# 104-12-1 is not present on state lists from CA, PA, MN, MA, FL, or NJ.
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:
T
Risk Phrases:

R 23/24/25 Toxic by inhalation, in contact with skin and if swallowed.
R 36/37/38 Irritating to eyes, respiratory system and skin.

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

WGK (Water Danger/Protection)
CAS# 104-12-1: 2
Canada - DSL/NDSL
CAS# 104-12-1 is listed on Canada's NDSL List.
Canada - WHMIS
This product has a WHMIS classification of D1B, D2B.
Canadian Ingredient Disclosure List
Exposure Limits
CAS# 104-12-1: OEL-RUSSIA:STEL 0.5 mg/m3;Skin

Section 16 - Additional Information

MSDS Creation Date: 8/24/1997
Revision #6 Date: 3/18/2003