MATERIAL SAFETY DATA SHEET

Section 1 - Product and Company Information

Product detail

Product Name: Chlorendic Anhydride

Synonyms: 1,4,5,6,7,7-Hexachloro-8,9,10-trinorborn-5- ene-2,3-dicarboxylic anhydride

Molecular Formula: C9 H2 CI6 O3

Manufacturer/Supplier

Lonwin Industry Group Limited

Address:Room A407,Tower A,Fagina Building,No 966 Huaxu Road, Qingpu District,Shanghai, 201702, P.R. China.

Tel: 0086-21-59885030 Fax:0086-21-65080210

http://www.lonwinchem.com

Section 2 - Composition/Information on Ingredients

Product Name: Chlorendic Anhydride

CAS No.: 115-27-5

Hazard Symbols: No

Section 3 - Hazards Identification

Potential Acute Health Effects:Inhalation and skin contact are expected to be the primary routes of occupational exposure to chlorendic anhydride. This material is irritating to the eyes, skin and respiratory tract. Allergic skin reaction may occur in susceptible individuals. Chlorendic anhydride is considered, on the basis of single exposure (acute) animal tests, to be slightly toxic after ingestion (swallowing), practically non-toxic after inhalation and skin contact, severely irritating to eyes and practically non-irritating to skin.

Potential Chronic Health Effects: Chlorendic anhydride will slowly degrade to chlorendic acid in the presence of water and/or sunlight. The National Toxicology Program (NTP) has concluded that there is clear evidence of carcinogenicity (cancer) in a feeding study of rats and mice using chlorendic acid. International Agency for Research on Cancer (IARC) has given chlorendic acid an overall evaluation of 2B (possibly carcinogenic).

Section 4 - First Aid Measures

Inhalation

If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Ingestion

If swallowed, induce vomiting as directed by medical personnel. Get medical attention. NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON.

Section 5 - Fire Fighting Measures

Fire Fighting Media and Instructions

Non-Flammable. Not considered to present risks of explosion. However, contains up to 3% occluded volatiles, which can present a fire hazard if sufficient oxygen and a source of ignition is present. Ground containers and equipment to avoid static charge accumulation and/or use an inert atmosphere to prevent combustion.

Section 6 - Accidental Release Measures

Small Spill

Use appropriate tools to put the spilled solid in a convenient waste disposal container.

Large Spill

Stop the leak if possible. Ventilate the area involved. Sweep up the material and place in container for later disposal.

Section 7 - Handling and Storage

Handling

S36/37/39 – Wear suitable protective clothing, gloves and eye/face protection.
S61- Avoid release to the environment. Refer to special instructions/safety data sheet.
S25 – Avoid contact with eyes.
S26 – In case of contact with eyes, rinse immediately with plenty of water.
Seek medical attention.

Storage

Store in well ventilated area away from sources of ignition.

Section 8 - Exposure Controls / Personal Protection

Engineering controls

Investigate engineering techniques to reduce exposures. Provide ventilation if necessary to minimize exposure. If practical use local mechanical exhaust ventilation at sources of air contamination such as open process equipment.

Personal protective equipment

Chemical resistant coveralls, gloves and boot covers. Shoes/boots. A full-face piece respirator with dual organic vapor and particulate matter cartridge is recommended.

Personal Protection in Case of a Large Spill

Chemical resistant coveralls, gloves and boot covers. Shoes/boots. A full-face piece respirator
with dual organic vapor and particulate matter cartridge is recommended. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this

product.

Exposure Limits

Toluene: TWA: 188 mg/m3 from ACGIH. and TWA: 50 ppm from ACGIH.
Maleic anhydride: TWA: 0.25 ppm from OSHA/NIOSH., TWA: 0.25 ppm from ACGIH. And TWA: 0.25 ppm from NIOSH.
Heptane: TWA: 400 ppm and STEL:500ppm from ACGIH.
Cyclohexane: TWA: 300 ppm from OSHA/NIOSH.
Methylhexane TWA: 400 ppm from NIOSH.

Section 9 - Physical/Chemical Properties

Appearance	Odor No distinctive
Molecular Weight	Color White to yellowish
	3
pH (1% soln/water)	Not Available.
Boiling Point	Not available.
Melting Point	235°C (455°F)
Critical Temperature	Not available.
Relative Density	1.73 (Water = 1)
Vapor Pressure	2 mm of Hg (@ 20°C)
Vapor Density	13 (Air = 1)
Volatility	Not available
Evaporation Rate	Not available.
Viscosity	Not available.
Partition Coefficient	
Log n-Octanol/Water	Octanol/water = 2.21; 1,2-dichlorobenzene/water =
Ionicity (In Water)	Not available.
Dispersion Properties	Not available.
Solubility	Easily soluble in acetone. Soluble in methanol, diethyl ether, n-octanol. Insoluble in cold water, hot water
Flash Point	Not available.
Auto Ignition Temp.	Not available.
Flammability	Non-flammable. However, contains up to 3% occluded volatiles, which can present a fire hazard if sufficient oxygen and a source of ignition is present. Ground containers and equipment to avoid static charge accumulation and/or use an inert atmosphere to prevent combustion.
Explosive Properties	Not considered to present risks of explosion.
Oxidising Properties	Not available.

Section 10 - Stability and Reactivity

Stability The product is stable.

Hazardous decomposition products

Not available

Hazardous polymerization

Not available

Incompatibility with Various Substances

Highly reactive with oxidizing agents, organic materials. Slightly reactive to reactive with reducing agents, acids, alkalis. Very slightly to slightly reactive with metals.

Section 11 - Toxicological Information

Route of exposure

Inhalation. Skin contact.

Toxicity to Animals

Acute oral toxicity (LD50): 1138-3130 mg/kg, Slightly toxic (Rat)

Acute dermal toxicity (LD50): > 10000 < 20000 mg/kg (Rabbit), practically non-toxic.

Acute inhalation toxicity (LC50): > 203 mg/l 1-hour exposure, > 65 mg/l 4-hour exposure (Rat), practically non-toxic.

Eye Irritation: Severely irritating (Rabbit)

Skin Irritation: Practically non-irritating 0.8/8.0 (Rabbit)

Section 12 - Ecological Information

Ecotoxicology

48-hour LC50: 110.7 ppm Daphnia magna, practically non-toxic

96-hour LC50: 422.7 ppm Bluegill sunfish, practically non-toxic

96-hour LC50: 422.7 ppm Rainbow trout, practically non-toxic

Chemical Fate

No additional remark

Section 13 - Disposal Considerations

Appropriate method of disposal of substance or preparation

Recycle to process, if possible. Consult your local or regional authorities for disposal options.

Section 14 - Transport Information

DOT

Proper Shipping Name: None

Non-Hazardous for Transport: This substance is considered to be non-hazardous for transport.

IATA

Non-Hazardous for Air Transport: Non-hazardous for air transport.

Customs Classification International HTS# 2917.20.0000

Section 15 - Regulatory Information

European Labeling

T Symbol

N Symbol

R36/37/38 – Irritating to eyes, respiratory system and skin.

R45 – May cause cancer.

S36/37/39 – Wear suitable protective clothing, gloves and eye/face protection.

S61 – Avoid release to the environment. Refer to special instructions/safety data sheet.

S25 – Avoid contact with eyes.

Global Inventories

Europe (EINECS, ELINCS, NLP) In Compliance with the EINECS

Australia (AICS)	In Compliance with the AICS
Canada (DSL, NDSL)	In Compliance with the DSL
China (IECSC)	In Compliance with the IECSC
Japan (ENCS)	In Compliance with the ENCS
Korea (KECI)	In Compliance with the KECI
New Zealand (NZIoC)	In Compliance with the NZIoC
Philippines (PICCS)	In Compliance with the PICCS
United States (TSCA)	In Compliance with the TSCA

Other Regulations

Germany: Ordinance on the Classification of Water-Endangering Substances. This substance has been assigned WGK Class: 2 (water endangering); WGK Identification Number: None; assigned by Velsicol Chemical LLC, pending further evaluation.

Section 16 - Other Information

Full Text of Phrases

R11: Highly flammable.

R22: Harmful if swallowed.

R34: Causes burns.

R36/37/38: Irritating to eyes, respiratory system and skin.

R38: Irritating to skin.

R42/43: May cause sensitization by inhalation and skin contact.

R45: May cause cancer

R48/20: Harmful: danger of serious damage to health by prolonged exposure through inhalation. R50/53: Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

R63: Possible risk of harm to the unborn child.

R65: Harmful: may cause lung damage if swallowed. R67: Vapours may cause drowsiness and dizziness.

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