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Revision Date 09-May-2011

Revision Number 3

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND THE COMPANY/UNDERTAKING

**Product Name** Chloroform  
**Product Code(s)** 0757  
**Recommended Use** For Further Manufacturing Use Only  
Not for Human or Animal Drug Use  
**Synonyms** FORMYL TRICHLORIDE \* METHANE TRICHLORIDE \* METHANE,  
**Company**  
AMRESKO, LLC  
6681 Cochran Road  
Solon, Ohio 44139  
**Emergency Telephone Number** Chemtrec 1-800-424-9300  
**Company Phone Number** 1-800-448-4442  
**E-mail Address** info@amresco-inc.com

2. HAZARDS IDENTIFICATION

GHS - Classification

**Classification** Acute Toxicity Oral 4 Specific Target Organ Toxicity (repeated) 2 Skin Irritant 2  
**Signal Word** Warning



**Hazard Statements** H302 - Harmful if swallowed H315 - Causes skin irritation H319 - Causes serious eye irritation H351 - Suspected of causing cancer H373 - May cause damage to organs through prolonged or repeated exposure

**Precautionary Statements** P280 - Wear protective gloves/protective clothing/eye protection/face protection  
P302+ P352 - IF ON SKIN: Wash with plenty of soap and water P304 + P340 - IF  
INHALED: Remove victim to fresh air and keep at rest in a position comfortable for  
breathing P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for  
several minutes. Remove contact lenses, if present and easy to do. Continue  
rinsing

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	EC No.	REACH Reg. No.	CAS-No	Weight %	Classification
Chloroform	EEC No. 200-663-8	Not available	67-66-3	95-100	Xn;R22-48/20/22 Xi;R38 Carc.Cat.3;R40

### 4. FIRST AID MEASURES

**Eye Contact** Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician

**Skin Contact** Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes.

**Inhalation** Move to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

**Ingestion** Clean mouth with water and afterwards drink plenty of water. Never give anything by mouth to an unconscious person.

**Notes to Physician** Treat symptomatically

### 5. FIRE-FIGHTING MEASURES

**Flammable Properties** Not flammable

**Flash Point** Not determined

**Suitable Extinguishing Media** Dry chemical, CO<sub>2</sub>, water spray or regular foam

**Hazardous Combustion Products** Hydrogen Chloride gas, Phosgene gas, Carbon oxides.

**Explosion Data**

**Sensitivity to Mechanical Impact** Not sensitive

**Sensitivity to Static Discharge** Not sensitive

**Protective Equipment and Precautions for Firefighters** As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear

### 6. ACCIDENTAL RELEASE MEASURES

**Personal Precautions** Avoid contact with skin, eyes and clothing. Use personal protective equipment. Ensure adequate ventilation

**Methods for Containment** Prevent further leakage or spillage if safe to do so

**Methods for Cleaning Up** Pick up and transfer to properly labeled containers

**7. HANDLING AND STORAGE**

**Handling** Handle in accordance with good industrial hygiene and safety practice. Protect from light.

**Storage** Keep container tightly closed in a dry and well-ventilated place. Protect from light.

**Incompatible Products** Bases. Aluminium.

**8. EXPOSURE CONTROLS / PERSONAL PROTECTION**

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Chloroform 67-66-3	TWA: 10 ppm	(vacated) TWA: 2 ppm (vacated) TWA: 9.78 mg/m <sup>3</sup> Ceiling: 240 mg/m <sup>3</sup> Ceiling: 50 ppm	IDLH: 500 ppm STEL: 2 ppm STEL: 9.78 mg/m <sup>3</sup>

**Engineering Measures** Showers  
Eyewash stations  
Ventilation systems

**Personal Protective Equipment**

**Eye/Face Protection** Safety glasses with side-shields.

**Skin and Body Protection** Wear protective gloves/clothing

**Respiratory Protection** If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations

**Hygiene Measures** Handle in accordance with good industrial hygiene and safety practice

**9. PHYSICAL AND CHEMICAL PROPERTIES**

<b>Appearance</b>	Clear, colorless	
<b>Odor</b>	No information available	
<b>Odor Threshold</b>	No information available	
<b>Decomposition Temperature °C</b>	No information available	
<b>Freezing Point</b>	No information available	
<b>Initial Boiling Point</b>	No information available	
<b>Physical State</b>	Liquid	
<b>pH</b>	No data available	
<b>Flash Point</b>	Not determined	
<b>Autoignition Temperature</b>	No data available	
<b>Boiling Point/Range</b>	59.4-61.5 °C	
<b>Melting Point/Range</b>	-63 °C	
<b>Flammability Limits in Air</b>	<b>Upper</b> No data available	<b>Lower</b> No data available
<b>Explosive Properties</b>	No information available	
<b>Oxidizing Properties</b>	No information available	
<b>Evaporation Rate</b>	5.79	
<b>MMHG @ 37.8 C</b>	No data available	
<b>Vapor Density</b>	No data available	
<b>Specific Gravity</b>	1.48	
<b>Density</b>	4.1	
<b>Solubility</b>	Soluble	
<b>Water Solubility</b>	Very soluble in water	
<b>Partition Coefficient (n-octanol/water)</b>	No data available	
<b>Viscosity</b>	No information available	

**10. STABILITY AND REACTIVITY**

<b>Stability</b>	Stable under recommended storage conditions
<b>Incompatible Products</b>	Bases. Aluminium.
<b>Conditions to Avoid</b>	Protect from light and moisture.
<b>Hazardous Decomposition Products</b>	Hydrogen chloride. Phosgene gas. Carbon oxides.
<b>Hazardous Polymerization</b>	Hazardous polymerization does not occur

**11. TOXICOLOGICAL INFORMATION**

**Acute Toxicity**

**Product Information** Toxic by inhalation, in contact with skin or if swallowed. Irritating to eye, skin and respiratory system.

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Chloroform	695 mg/kg ( Rat )	3980 mg/kg ( Rabbit )	47702 mg/kg ( Rat ) 4 h

**Chronic Toxicity**

**Chronic Toxicity** Suspected carcinogen.

Chemical Name	ACGIH	IARC	NTP	OSHA
Chloroform	A3	Group 2B	Reasonably Anticipated	X

**Target Organ Effects**                      Nerves, Liver, Heart.

**12. ECOLOGICAL INFORMATION**

**Ecotoxicity**

Harmful to aquatic organisms.

Chemical Name	Toxicity to Algae	Toxicity to Fish	Microtox	Daphnia Magna (Water Flea)
Chloroform	EC50 = 560 mg/L 48 h	LC50= 18 mg/L Lepomis macrochirus 96 h LC50= 18 mg/L Oncorhynchus mykiss 96 h LC50= 300 mg/L Poecilia reticulata 96 h LC50= 70.7 mg/L Pimephales promelas 96 h	EC50 = 520 mg/L 5 min EC50 = 670 mg/L 15 min EC50 = 670 mg/L 30 min	EC50 = 28.9 mg/L 48 h

Chemical Name	Log Pow
Chloroform	= 2 25 °C

**13. DISPOSAL CONSIDERATIONS**

**Waste Disposal Method**                      Dispose of material in accordance with all federal, state, and local regulations

**Contaminated Packaging**                      Dispose of in accordance with all federal, state and local regulations

**14. TRANSPORT INFORMATION**

**IATA**

**UN-No**    1888  
**Proper Shipping Name**                      CHLOROFORM  
**Hazard Class**                                   6.1  
**Packing Group**                                III

**DOT**

**Proper Shipping Name**                      CHLOROFORM  
**Hazard Class**                                   6.1  
**UN-No**    1888  
**Packing Group**                                III

**15. REGULATORY INFORMATION**

**REACH Title VII Restrictions** No information available.

Chemical Name	Dangerous Substances	Organic Solvents	Harmful Substances Whose Names Are to be Indicated on the Label	Pollution Release and Transfer Registry (Class II):	Pollution Release and Transfer Registry (Class I):	Poison and Deleterious Substances Control Law:
Chloroform	>=>=0.1 % weight	Class 1	X	Not applicable	95	Deleterious

Component	ISHA - Harmful Substances Prohibited for Manufacturing, Importing, Transferring, or Supplying	ISHA - Harmful Substances Requiring Permission	Toxic Chemical Classification Listing (TCCL) - Toxic Chemicals	Toxic Release Inventory (TRI) - Group I	Toxic Release Inventory (TRI) - Group II
Chloroform 67-66-3 ( 95-100 )	Not applicable	Not applicable	97-1-281, 85 % or more in mixtures	Not applicable	>= 0.1 %

**International Inventories**

TSCA	Complies
EINECS/ELINCS	Complies
ENCS	Complies
IECSC	Complies
KECL	Complies
PICCS	Complies
AICS	Complies

**U.S. Federal Regulations**

**SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Chemical Name	CAS-No	Weight %	SARA 313 - Threshold Values %
Chloroform	67-66-3	95-100	0.1

**SARA 311/312 Hazard Categories**

Acute Health Hazard	Yes
Chronic Health Hazard	Yes
Fire Hazard	No
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

**Clean Water Act**

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

Component	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Chloroform 67-66-3 ( 95-100 )	10 lb	X	X	X

**Clean Air Act, Section 112 Hazardous Air Pollutants (HAPs) (see 40 CFR 61)**

This product contains the following substances which are listed hazardous air pollutants (HAPS) under Section 112 of the Clean Air Act:.

Chemical Name	CAS-No	Weight %	HAPS data	VOC Chemicals	Class 1 Ozone Depletors	Class 2 Ozone Depletors
Chloroform	67-66-3	95-100	Present	Group I		

**CERCLA**

Chemical Name	Hazardous Substances RQs	Extremely Hazardous Substances RQs
Chloroform	10 lb	10 lb

**U.S. State Regulations**

**California Proposition 65**

This product contains the following Proposition 65 chemicals

Chemical Name	CAS-No	California Prop. 65
Chloroform	67-66-3	Carcinogen

Chemical Name	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Chloroform	X	X	X	X	X

**International Regulations**

**Mexico - Grade**

Chemical Name	Carcinogen Status	Exposure Limits
Chloroform	A3	Mexico: TWA= 50 mg/m <sup>3</sup> Mexico: TWA= 10 ppm Mexico: STEL= 225 mg/m <sup>3</sup> Mexico: STEL= 50 ppm

**Canada**

**WHMIS Hazard Class**

D1B Toxic materials  
 D2A Very toxic materials



Chemical Name	NPRI
Chloroform	X

## 16. OTHER INFORMATION

**Issuing Date** 02-Sep-2009

**Revision Date** 09-May-2011

**Revision Note**  
No information available.

**Recommended Restrictions** No information available

### Disclaimer

The information provided on this MSDS is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

**End of MSDS**