ALFAAL13200

Chloroform, stabilized

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

产品说明: 氯仿
Product Description: **Chloroform, stabilized**

Cat No. : **L13200**
Synonyms Formyl trichloride; Methane trichloride; Methenyl trichloride
CAS No 67-66-3
Molecular Formula C H Cl3

Supplier

Avocado Research Chemicals Ltd.
(Part of Thermo Fisher Scientific)
Shore Road, Heysham
Lancashire, LA3 2XY,
United Kingdom
Office Tel: +44 (0) 1524 850506
Office Fax: +44 (0) 1524 850608

Emergency Telephone Number

For information **US** call: 001-800-227-6701 / **Europe** call: +32 14 57 52 11
Emergency Number **US:**001-201-796-7100 / **Europe:** +32 14 57 52 99
CHEMTREC Tel. No. **US:**001-800-424-9300 / **Europe:**001-703-527-3887

E-mail address begel.sdsdesk@thermofisher.com

Recommended Use Laboratory chemicals.
Uses advised against

SECTION 2. HAZARD IDENTIFICATION

Physical State	**Appearance**	**Odor**
Liquid	Colorless	aromatic Slight sweet

Emergency Overview

Harmful if swallowed. Causes skin irritation. Causes serious eye irritation. Toxic if inhaled. May cause drowsiness and dizziness. Suspected of causing cancer. Suspected of damaging fertility or the unborn child. Causes damage to organs through prolonged or repeated exposure. Sensitivity to light.

Classification of the substance or mixture

Acute Oral Toxicity	Category 4
Acute Inhalation Toxicity - Vapors	Category 3
Skin Corrosion/Irritation	Category 2
Serious Eye Damage/Eye Irritation	Category 2
Carcinogenicity	Category 2
Reproductive Toxicity	Category 2
Specific target organ toxicity - (single exposure)	Category 3
Specific target organ toxicity - (repeated exposure)	Category 1

Label Elements

Signal Word **Danger**

Hazard Statements
H302 - Harmful if swallowed
H315 - Causes skin irritation
H319 - Causes serious eye irritation
H331 - Toxic if inhaled
H336 - May cause drowsiness or dizziness
H351 - Suspected of causing cancer
H372 - Causes damage to organs through prolonged or repeated exposure
H361 - Suspected of damaging fertility or the unborn child

Precautionary Statements
Prevention
P201 - Obtain special instructions before use
P202 - Do not handle until all safety precautions have been read and understood
P260 - Do not breathe dust/fume/gas/mist/vapors/spray
P270 - Do not eat, drink or smoke when using this product
P264 - Wash face, hands and any exposed skin thoroughly after handling
P271 - Use only outdoors or in a well-ventilated area
P280 - Wear eye protection/ face protection
Response
P301 + P312 - IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
P304 + P340 - IF INHALED: Remove person to fresh air and keep 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
P308 + P313 - IF exposed or concerned: Get medical advice/attention
P330 - Rinse mouth
P332 + P313 - If skin irritation occurs: Get medical advice/attention
P362 + P364 - Take off contaminated clothing and wash it before reuse
Storage
P403 + P233 - Store in a well-ventilated place. Keep container tightly closed
P405 - Store locked up
Disposal
P501 - Dispose of contents/ container to an approved waste disposal plant

Physical and Chemical Hazards
None identified.
Health Hazards
Harmful if swallowed. Causes skin irritation. Causes serious eye irritation. Toxic if inhaled. May cause drowsiness or dizziness. Suspected of causing cancer. Suspected of damaging fertility or the unborn child. Causes damage to organs through prolonged or repeated exposure.
Environmental hazards
Contains no substances known to be hazardous to the environment or not degradable in waste water treatment plants. Will likely be mobile in the environment due to its volatility. The product contains volatile organic compounds (VOC) which will evaporate easily from all surfaces.

Other Hazards
Cardiac and respiratory depression Overexposure may cause decreased heart rate, decreased blood pressure, heart block, and cardiac failure
Toxic to terrestrial vertebrates. This product does not contain any known or suspected endocrine disruptors.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS No	Weight %
Chloroform	67-66-3	>99
Ethyl alcohol	64-17-5	<1.0

SECTION 4. FIRST AID MEASURES

General Advice
Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.

Eye Contact
Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

Skin Contact
Wash off immediately with plenty of water for at least 15 minutes. Immediate medical attention is required.

Inhalation
Remove to fresh air. If not breathing, give artificial respiration. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Immediate medical attention is required.

Ingestion
Do NOT induce vomiting. Call a physician or poison control center immediately.

Most important symptoms and effects
. Symptoms of overexposure are dizziness, headache, tiredness, nausea, unconsciousness, cessation of breathing: May cause decreases in blood pressure and other cardiac effects: Symptoms may be delayed

Self-Protection of the First Aider
Use personal protective equipment as required.

Notes to Physician
Treat symptomatically. Signs of overdose include stupor and respiratory depression. Symptoms may be delayed.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media
Substance is nonflammable; use agent most appropriate to extinguish surrounding fire.

Extinguishing media which must not be used for safety reasons
No information available.

Specific Hazards Arising from the Chemical
Non-combustible, substance itself does not burn but may decompose upon heating to produce corrosive and/or toxic fumes.

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. Thermal decomposition can lead to release of irritating gases and vapors.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions
Ensure adequate ventilation. Use personal protective equipment as required. Keep people away from and upwind of spill/leak. Evacuate personnel to safe areas.

Environmental Precautions

Should not be released into the environment.

Methods for Containment and Clean Up
Soak up with inert absorbent material. Keep in suitable, closed containers for disposal.

Refer to protective measures listed in Sections 8 and 13.

SECTION 7. HANDLING AND STORAGE

Handling
Wear personal protective equipment/face protection. Do not get in eyes, on skin, or on clothing. Use only under a chemical fume hood. Do not breathe mist/vapors/spray. Do not ingest. If swallowed then seek immediate medical assistance.

Storage
Keep containers tightly closed in a dry, cool and well-ventilated place. Protect from direct sunlight. Store under an inert atmosphere. Air sensitive.

Specific Use(s)
Use in laboratories

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters

Component	China	ACGIH TLV	OSHA PEL	NIOSH
Chloroform	TWA: 20 mg/m³ STEL: 40 mg/m³	TWA: 10 ppm	(Vacated) TWA: 2 ppm (Vacated) TWA: 9.78 mg/m³ Ceiling: 50 ppm Ceiling: 240 mg/m³	IDLH: 500 ppm STEL: 2 ppm STEL: 9.78 mg/m³
Ethyl alcohol	-	STEL: 1000 ppm	(Vacated) TWA: 1000 ppm (Vacated) TWA: 1900 mg/m³ TWA: 1000 ppm TWA: 1900 mg/m³	IDLH: 3300 ppm REL = 1000 ppm (TWA) REL = 1900 mg/m³ (TWA)

Component	Hong Kong	Thailand	European Union	The United Kingdom
Chloroform	TWA: 10 ppm TWA: 49 mg/m³	Ceiling: 50 ppm	TWA: 2 ppm 8 hr TWA: 10 mg/m³ 8 hr Possibility of significant uptake through the skin	TWA: 2 ppm TWA: 9.9 mg/m³ STEL: 6 ppm STEL: 29.7 mg/m³
Ethyl alcohol	TWA: 1000 ppm TWA: 1880 mg/m³	TWA: 1000 ppm		TWA: 1000 ppm TWA; 1920 mg/m³ TWA WEL - STEL: 3000 ppm STEL; 5760 mg/m³ STEL

Legend

ACGIH - American Conference of Governmental Industrial Hygienists
OSHA - Occupational Safety and Health Administration
NIOSH: NIOSH - National Institute for Occupational Safety and Health

Monitoring methods
BS EN 14042:2003 Title Identifier: Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents. MDHS70 General methods for sampling airborne gases and vapours MDHS 88 Volatile organic compounds in air. Laboratory method using diffusive samplers, solvent desorption and gas chromatography MDHS 96 Volatile organic compounds in air - Laboratory method using pumped solid sorbent tubes, solvent desorption and gas chromatography

Exposure Controls

Engineering Measures
Use only under a chemical fume hood. Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations

and safety showers are close to the workstation location. Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimise release or contact, and the use of properly designed ventilation systems, should be adopted to control hazardous materials at source.

Personal protective equipment

Eye Protection Goggles (European standard - EN 166)

Hand Protection Protective gloves

Glove material	Breakthrough time	Glove thickness	EU standard	Glove comments
Viton (R)	> 480 minutes	0.30 mm	Level 6 EN 374	As tested under EN374-3 Determination of Resistance to Permeation by Chemicals
Neoprene	< 25 minutes	0.45 mm		
Butyl rubber	< 15 minutes	0.35 mm		

Inspect gloves before use.
Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. (Refer to manufacturer/supplier for information)
Ensure gloves are suitable for the task: Chemical compatability, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion.
Remove gloves with care avoiding skin contamination.

Skin and body protection Long sleeved clothing

Respiratory Protection When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.
To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained properly

Large scale/emergency use Use a NIOSH/MSHA or European Standard EN 136 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced
Recommended Filter type: low boiling organic solvent Type AX Brown conforming to EN371

Small scale/Laboratory use Use a NIOSH/MSHA or European Standard EN 149:2001 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.
Recommended half mask:- Valve filtering: EN405; or; Half mask: EN140; plus filter, EN 141
When RPE is used a face piece Fit Test should be conducted

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

Environmental exposure controls Prevent product from entering drains.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Colorless	
Physical State	Liquid	
Odor	aromatic Slight sweet	
Odor Threshold	No data available	
pH	No information available	
Melting Point/Range	-63 °C / -81.4 °F	
Softening Point	No data available	
Boiling Point/Range	61 °C / 141.8 142.7 °F	
Flash Point	No information available	**Method -** No information available
Evaporation Rate	11.6 (Butyl Acetate = 1.0)	
Flammability (solid,gas)	Not applicable	Liquid
Explosion Limits	No data available	

Vapor Pressure	213 mbar @ 20 °C	
Vapor Density	4.12 (Air = 1.0)	(Air = 1.0)
Specific Gravity / Density	1.480	
Bulk Density	Not applicable	Liquid
Water Solubility	8 g/L (20°C)	
Solubility in other solvents	Miscible; organic solvents	
Partition Coefficient (n-octanol/water)		
Component	**log Pow**	
Chloroform	2	
Ethyl alcohol	-0.32	
Autoignition Temperature	No data available	
Decomposition Temperature	No data available	
Viscosity	0.56 mPa.s @ 20 °C	
Explosive Properties	No information available	
Oxidizing Properties	No information available	

Molecular Formula	C H Cl3
Molecular Weight	119.38

SECTION 10. STABILITY AND REACTIVITY

Stability Stable under normal conditions. UNSTABLE (REACTIVE) UPON DEPLETION OF INHIBITOR. Light sensitive.

Hazardous Reactions None under normal processing.

Hazardous Polymerization Hazardous polymerization does not occur.

Conditions to Avoid Incompatible products. Heat, flames and sparks. Excess heat. Exposure to light. Don't use.

Materials to avoid Strong oxidizing agents. Alkali metals. Aluminium. Acetone.

Hazardous Decomposition Products Carbon monoxide (CO). Carbon dioxide (CO_2). Phosgene. Hydrogen chloride gas.

SECTION 11. TOXICOLOGICAL INFORMATION

Product Information

(a) acute toxicity;

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Chloroform	LD50 = 908 mg/kg (rat) LD50 = 695 mg/kg (Rat) LD50 = 450 mg/kg (Rat)	LD50 > 20 g/kg (Rabbit)	LC50 = 10.5 mg/L (Rat) 4 h
Ethyl alcohol	LD50 = 10470 mg/kg OECD 401 (Rat) 3450 mg/kg (Mouse)		LC50 = 117-125 mg/l (4h) OECD 403 (rat) 20000 ppm/10H (rat)

(b) skin corrosion/irritation; Category 2

(c) serious eye damage/irritation; Category 2

(d) respiratory or skin sensitization;

Respiratory No data available

Skin No data available

Component	Test method	Test species	Study result
Ethyl alcohol 64-17-5 (<1.0)	Mouse Ear Swelling Test (MEST)	mouse ----------	non-sensitising ----------

	---------- OECD Test Guideline 429 Local Lymph Node Assay	mouse	non-sensitising

(e) germ cell mutagenicity; No data available

Component	Test method	Test species	Study result
Ethyl alcohol 64-17-5 (<1.0)	AMES test OECD Test Guideline 471 ---------- Gene cell mutation OECD Test Guideline 476	in vitro Bacteria ---------- in vitro Mammalian	negative ---------- negative

(f) carcinogenicity; Category 2

The table below indicates whether each agency has listed any ingredient as a carcinogen Limited evidence of a carcinogenic effect Ethanol has been shown to be carcinogenic in long-term studies only when consumed and abused as an alcoholic beverage.

Component	EU	UK	Germany	IARC
Chloroform				Group 2B

(g) reproductive toxicity; Category 2

Component	Test method	Test species / Duration	Study result
Ethyl alcohol 64-17-5 (<1.0)	OECD Test Guideline 416 ---------- OECD Test Guideline 414	Oral / mouse 2 Generation ---------- Inhalation / Rat	NOAEL = 13.8 g/kg/day ---------- NOAEC = 16000 ppm

Reproductive Effects SUSPECT REPRODUCTIVE HAZARD - CONTAINS MATERIAL WHICH MAY INJURE UNBORN CHILD (CAUSE BIRTH DEFECTS) (BASED ON ANIMAL DATA).

(h) STOT-single exposure; Category 3

Results / Target organs Central nervous system (CNS)

(i) STOT-repeated exposure; Category 1

Study result LOAEL = 15 mg/kg bw/day
NOAEC = 25 mg/m^3

Target Organs Kidney, Liver, Nasal Cavities.

(j) aspiration hazard; No data available

Other Adverse Effects Tumorigenic effects have been reported in experimental animals. See actual entry in RTECS for complete information

Symptoms / effects,both acute and delayed Symptoms of overexposure are dizziness, headache, tiredness, nausea, unconsciousness, cessation of breathing: May cause decreases in blood pressure and other cardiac effects: Symptoms may be delayed

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity effects Do not empty into drains. Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment. The product contains following substances which are hazardous for the environment.

Component	Freshwater Fish	Water Flea	Freshwater Algae	Microtox
Chloroform	LC50: = 300 mg/L, 96h static (Poecilia reticulata)	EC50 = 28.9 mg/L/48h	EC50 = 560 mg/L/48h	Photobacterium phosphoreum: EC50 = 520 mg/L/5 min

	LC50: = 18 mg/L, 96h flow-through (Lepomis macrochirus) LC50: = 18 mg/L, 96h flow-through (Oncorhynchus mykiss) LC50: = 71 mg/L, 96h flow-through (Pimephales promelas)			Photobacterium phosphoreum: EC50 = 670 mg/L/15 min Photobacterium phosphoreum: EC50 = 670 mg/L/30min
Ethyl alcohol	Fathead minnow (Pimephales promelas) LC50 = 14200 mg/l/96h	EC50 = 9268 mg/L/48h EC50 = 10800 mg/L/24h	EC50 (72h) = 275 mg/l (Chlorella vulgaris)	Photobacterium phosphoreum:EC50 = 34634 mg/L/30 min Photobacterium phosphoreum:EC50 = 35470 mg/L/5 min

Persistence and Degradability

Persistence Persistence is unlikely, based on information available.

Component	Degradability
Ethyl alcohol 64-17-5 (<1.0)	OECD 301E = 94%

Degradation in sewage treatment plant Contains substances known to be hazardous to the environment or not degradable in waste water treatment plants.

Bioaccumulative Potential Bioaccumulation is unlikely

Component	log Pow	Bioconcentration factor (BCF)
Chloroform	2	1.4 - 13 dimensionless
Ethyl alcohol	-0.32	No data available

Mobility in soil The product contains volatile organic compounds (VOC) which will evaporate easily from all surfaces Will likely be mobile in the environment due to its volatility Disperses rapidly in air

Endocrine Disruptor Information This product does not contain any known or suspected endocrine disruptors
Persistent Organic Pollutant This product does not contain any known or suspected substance
Ozone Depletion Potential This product does not contain any known or suspected substance

SECTION 13. DISPOSAL CONSIDERATIONS

Waste from Residues/Unused Products Waste is classified as hazardous. Dispose of in accordance with the European Directives on waste and hazardous waste. Dispose of in accordance with local regulations.

Contaminated Packaging Dispose of this container to hazardous or special waste collection point.

Other Information Do not flush to sewer. Waste codes should be assigned by the user based on the application for which the product was used. Do not empty into drains.

SECTION 14. TRANSPORT INFORMATION

Road and Rail Transport

UN-No UN1888
Proper Shipping Name CHLOROFORM
Hazard Class 6.1
Packing Group III

IMDG/IMO

UN-No UN1888

Proper Shipping Name	CHLOROFORM
Hazard Class	6.1
Packing Group	III

IATA

UN-No	UN1888
Proper Shipping Name	CHLOROFORM
Hazard Class	6.1
Packing Group	III

Special Precautions for User No special precautions required

SECTION 15. REGULATORY INFORMATION

International Inventories
X = listed, China (IECSC), Europe (EINECS/ELINCS/NLP), U.S.A. (TSCA), Canada (DSL/NDSL), Philippines (PICCS), Japan (ENCS), Japan (ISHL), Australia (AICS), Korea (KECL).

Component	The Inventory of Hazardous Chemicals (2015 Edition)	List of dangerous goods GB 12268 - 2012	IECSC	EINECS	TSCA	DSL	PICCS	ENCS	ISHL	AICS	KECL
Chloroform	X	X	X	200-663-8	X	X	X	X	X	X	X
Ethyl alcohol	X	X	X	200-578-6	X	X	X	X	X	X	KE-13217

National Regulations

SECTION 16. OTHER INFORMATION

Prepared By	Health, Safety and Environmental Department
Creation Date	20-Jan-2010
Revision Date	09-Aug-2026
Revision Summary	Initial Release.

Training Advice
Chemical hazard awareness training, incorporating labelling, Safety Data Sheets (SDS), Personal Protective Equipment (PPE) and hygiene.
Use of personal protective equipment, covering appropriate selection, compatibility, breakthrough thresholds, care, maintenance, fit and standards.
First aid for chemical exposure, including the use of eye wash and safety showers.
Chemical incident response training.
Fire prevention and fighting, identifying hazards and risks, static electricity, explosive atmospheres posed by vapours and dusts.

Legend

CAS - Chemical Abstracts Service
EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
IECSC - Chinese Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
ENCS - Japanese Existing and New Chemical Substances
AICS - Australian Inventory of Chemical Substances
NZIoC - New Zealand Inventory of Chemicals

WEL - Workplace Exposure Limit
ACGIH - American Conference of Governmental Industrial Hygienists
DNEL - Derived No Effect Level
RPE - Respiratory Protective Equipment
LC50 - Lethal Concentration 50%
NOEC - No Observed Effect Concentration
PBT - Persistent, Bioaccumulative, Toxic
TWA - Time Weighted Average
IARC - International Agency for Research on Cancer
PNEC - Predicted No Effect Concentration
LD50 - Lethal Dose 50%
EC50 - Effective Concentration 50%
POW - Partition coefficient Octanol:Water
vPvB - very Persistent, very Bioaccumulative

ICAO/IATA - International Civil Aviation Organization/International Air Transport Association
ADR - European Agreement Concerning the International Carriage of Dangerous Goods by Road
OECD - Organisation for Economic Co-operation and Development
BCF - Bioconcentration factor
IMO/IMDG - International Maritime Organization/International Maritime Dangerous Goods Code
MARPOL - International Convention for the Prevention of Pollution from Ships
ATE - Acute Toxicity Estimate
VOC - (Volatile Organic Compound)

Key literature references and sources for data
https://echa.europa.eu/information-on-chemicals
Suppliers safety data sheet, Chemadvisor - LOLI, Merck index, RTECS

Disclaimer

The information provided in this Safety Data Sheet 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 guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered 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 materials or in any process, unless specified in the text

End of Safety Data Sheet