

## Safety Data Sheet

according to UK REACH Regulation

### CARNOY's Fixative (Chloroform & Iron(III) Chloride) - A

Revision date: 21.08.2023

Product code: 11694.xxxxx

Page 1 of 17

#### SECTION 1: Identification of the substance/mixture and of the company/undertaking

##### 1.1. Product identifier

CARNOY's Fixative (Chloroform &amp; Iron(III) Chloride) - A

UFI: C0D1-X18J-Q00G-8FPH

##### 1.2. Relevant identified uses of the substance or mixture and uses advised against

###### Use of the substance/mixture

Use as laboratory reagent.

The product is intended for research, analysis and scientific education.

###### Uses advised against

Any non-intended use.

##### 1.3. Details of the supplier of the safety data sheet

Company name:	MORPHISTO GmbH	
Street:	Schumannstr. 142/144	
Place:	D-63069 Offenbach	
Telephone:	+49 (0) 69 / 400 3019-60	Telefax: +49 (0) 69 / 400 3019-64
E-mail:	info@morphisto.de	
Contact person:	Morphisto GmbH	
E-mail:	gefahrstoffmanagement@morphisto.de	
Internet:	http://www.morphisto.de	

##### 1.4. Emergency telephone number:

Poison Information Center Mainz, Germany, Tel: +49(0)6131/19240

#### SECTION 2: Hazards identification

##### 2.1. Classification of the substance or mixture

###### GB CLP Regulation

Flam. Liq. 2; H225  
Acute Tox. 4; H332  
Skin Irrit. 2; H315  
Eye Irrit. 2; H319  
Carc. 2; H351  
Repr. 2; H361d  
STOT RE 1; H372

Full text of hazard statements: see SECTION 16.

##### 2.2. Label elements

###### GB CLP Regulation

###### Hazard components for labelling

trichloromethane

Signal word: Danger

###### Pictograms:



###### Hazard statements

H225	Highly flammable liquid and vapour.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.

**Safety Data Sheet**

according to UK REACH Regulation

**CARNOY's Fixative (Chloroform & Iron(III) Chloride) - A**

Revision date: 21.08.2023

Product code: 11694.xxxxx

Page 2 of 17

H351	Suspected of causing cancer.
H361d	Suspected of damaging the unborn child.
H372	Causes damage to organs through prolonged or repeated exposure.

**Precautionary statements**

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P260	Do not breathe mist/vapours/spray.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P312	Call a POISON CENTER/doctor if you feel unwell.
P332+P313	If skin irritation occurs: Get medical advice/attention.
P337+P313	If eye irritation persists: Get medical advice/attention.

**Special labelling of certain mixtures**

EUH208	Contains Iron(III) chloride. May produce an allergic reaction. Restricted to professional users.
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**Labelling of packages where the contents do not exceed 125 ml**

Signal word: Danger

Pictograms:

**Hazard statements**

H351-H361d-H372

**Precautionary statements**

P260-P280

**2.3. Other hazards**

This substance/mixture contains no components considered to be either persistent, bioaccumulating and toxic (PBT) or very persistent and very bioaccumulating (vPvB) at levels of 0.1% or higher. Ecological information: The substance/mixture does not contain any components that are considered to be hazardous according to REACH Article 57(f) or Commission Delegated Regulation (EU) 2017/2100 or Commission Delegated Regulation (EU) 2018/605 in amounts of 0.1 % or more have endocrine disrupting properties. Toxicological information: The substance/mixture does not contain any components that are to be classified according to REACH Article 57(f) or Commission Delegated Regulation (EU) 2017/2100 or Commission Delegated Regulation (EU) 2018/605 in quantities of 0.1 % or more have endocrine disrupting properties.

**SECTION 3: Composition/information on ingredients****3.2. Mixtures**

**Safety Data Sheet**

according to UK REACH Regulation

**CARNOY's Fixative (Chloroform & Iron(III) Chloride) - A**

Revision date: 21.08.2023

Product code: 11694.xxxxx

Page 3 of 17

**Hazardous components**

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	Classification (GB CLP Regulation)			
64-17-5	Ethanol			45 - < 50 %
	200-578-6	603-002-00-5	01-2119457610-43	
	Flam. Liq. 2, Eye Irrit. 2; H225 H319			
67-66-3	trichloromethane			40 - < 45 %
	200-663-8	602-006-00-4	01-2119486657-20	
	Carc. 2, Repr. 2, Acute Tox. 3, Acute Tox. 4, Skin Irrit. 2, Eye Irrit. 2, STOT RE 1; H351 H361d H331 H302 H315 H319 H372			
64-19-7	Acetic acid%			10 - < 15 %
	200-580-7	607-002-00-6	01-2119475328-30	
	Flam. Liq. 3, Skin Corr. 1A; H226 H314			
78-93-3	butanone			< 1 %
	201-159-0	606-002-00-3	01-2119457290-43	
	Flam. Liq. 2, Eye Irrit. 2, STOT SE 3; H225 H319 H336 EUH066			
7705-08-0	Iron(III) chloride			< 1 %
	231-729-4		01-2119497998-05	
	Acute Tox. 4, Skin Irrit. 2, Eye Dam. 1, Skin Sens. 1; H302 H315 H318 H317			

Full text of H and EUH statements: see section 16.

**Specific Conc. Limits, M-factors and ATE**

CAS No	EC No	Chemical name	Quantity
	Specific Conc. Limits, M-factors and ATE		
64-17-5	200-578-6	Ethanol	45 - < 50 %
	inhalation: LC50 = 124,7 mg/l (vapours); dermal: LD50 = >2000 mg/kg; oral: LD50 = >5000 mg/kg Eye Irrit. 2; H319: >= 50 - 100		
67-66-3	200-663-8	trichloromethane	40 - < 45 %
	inhalation: LC50 = 10,5 mg/l (vapours); inhalation: ATE = 0,5 mg/l (dusts or mists); dermal: LD50 = >3980 mg/kg; oral: LD50 = 908 mg/kg		
64-19-7	200-580-7	Acetic acid%	10 - < 15 %
	inhalation: LC50 = >40 mg/l (vapours); oral: LD50 = 3530 mg/kg Skin Corr. 1A; H314: >= 90 - 100 Skin Corr. 1B; H314: >= 25 - < 90 Skin Irrit. 2; H315: >= 10 - < 25 Eye Irrit. 2; H319: >= 10 - < 25		
78-93-3	201-159-0	butanone	< 1 %
	dermal: LD50 = >2000 mg/kg; oral: LD50 = 2054 mg/kg		
7705-08-0	231-729-4	Iron(III) chloride	< 1 %
	dermal: LD50 = >2000 mg/kg; oral: LD50 = 450 mg/kg		

**Further Information**

This product contains no substances of very high concern (SVHC) (&gt;0,1%) which are included in the Candidate List according to Article 59 of REACH.

**SECTION 4: First aid measures**
**4.1. Description of first aid measures**
**General information**

Remove affected person from the danger area and lay down. In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible). Remove contaminated, saturated clothing immediately.

**Safety Data Sheet**

according to UK REACH Regulation

**CARNOY's Fixative (Chloroform & Iron(III) Chloride) - A**

Revision date: 21.08.2023

Product code: 11694.xxxxx

Page 4 of 17

First aider: Pay attention to self-protection!

**After inhalation**

Medical treatment necessary. Provide fresh air. In case of accident by inhalation: remove casualty to fresh air and keep at rest. Where appropriate artificial ventilation. If breathing is irregular or stopped, administer artificial respiration. No mouth-to-mouth or mouth-to-nose resuscitation. Use Ambu bag or ventilator. Call a physician immediately.

**After contact with skin**

After contact with skin, wash immediately with plenty of water and soap. Take off immediately all contaminated clothing and wash it before reuse. Medical treatment necessary. Remove contaminated, saturated clothing immediately. Gently wash with plenty of soap and water. Call a physician immediately.

**After contact with eyes**

After contact with the eyes, rinse with water with the eyelids open for a sufficient length of time, then consult an ophthalmologist immediately. Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Consult an ophthalmologist.

**After ingestion**

Observe risk of aspiration if vomiting occurs. If accidentally swallowed rinse the mouth with plenty of water (only if the person is conscious) and obtain immediate medical attention. Medical treatment necessary. Rinse mouth thoroughly with water. Let water be drunk in little sips (dilution effect). Do NOT induce vomiting. Never give anything by mouth to an unconscious person or a person with cramps. Call a physician immediately.

**4.2. Most important symptoms and effects, both acute and delayed**

No information available.

**4.3. Indication of any immediate medical attention and special treatment needed**

Treat symptomatically.

**SECTION 5: Firefighting measures****5.1. Extinguishing media****Suitable extinguishing media**

Water spray jet, Carbon dioxide (CO<sub>2</sub>), Foam, Extinguishing powder.

**Unsuitable extinguishing media**

High power water jet.

**5.2. Special hazards arising from the substance or mixture**

Highly flammable. Vapours can form explosive mixtures with air. Concentrated vapours are heavier than air. Reignition possible over considerable distance.  
In case of fire may be liberated: Carbon monoxide Carbon dioxide (CO<sub>2</sub>). Hydrogen chloride (HCl). Chlorine (Cl<sub>2</sub>). Phosgene

**5.3. Advice for firefighters**

Wear a self-contained breathing apparatus and chemical protective clothing. Full protection suit. In case of fire and/or explosion do not breathe fumes.

**Additional information**

Use water spray jet to protect personnel and to cool endangered containers. Suppress gases/vapours/mists with water spray jet. Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water. Fight fire remotely due to the risk of explosion.

**SECTION 6: Accidental release measures****6.1. Personal precautions, protective equipment and emergency procedures****General advice**

Remove all sources of ignition. Provide adequate ventilation. Do not breathe gas/fumes/vapour/spray. Avoid contact with skin, eyes and clothes. Use personal protection equipment. Ventilate affected area. Remove persons to safety. Use a positive-pressure air-supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air-purifying respirators may not

**Safety Data Sheet**

according to UK REACH Regulation

**CARNOY's Fixative (Chloroform & Iron(III) Chloride) - A**

Revision date: 21.08.2023

Product code: 11694.xxxxx

Page 5 of 17

provide adequate protection.

**6.2. Environmental precautions**

Do not allow uncontrolled discharge of product into the environment. Explosion risk. Discharge into the environment must be avoided. Prevent spread over a wide area (e.g. by containment or oil barriers). Cover drains. In case of gas escape or of entry into waterways, soil or drains, inform the responsible authorities.

**6.3. Methods and material for containment and cleaning up****For cleaning up**

Absorb with liquid-binding material (sand, diatomaceous earth, acid- or universal binding agents). Treat the recovered material as prescribed in the section on waste disposal.

**Other information**

Ventilate affected area. Clear contaminated areas thoroughly.

**6.4. Reference to other sections**

Safe handling: see section 7

Personal protection equipment: see section 8

Disposal: see section 13

**SECTION 7: Handling and storage****7.1. Precautions for safe handling****Advice on safe handling**

If handled uncovered, arrangements with local exhaust ventilation have to be used. Do not breathe gas/fumes/vapour/spray. Provide adequate ventilation as well as local exhaust at critical locations.

Personal protection equipment (See section 8.)

Avoid exposure - obtain special instructions before use.

**Advice on protection against fire and explosion**

Keep away from sources of ignition - No smoking. Take precautionary measures against static discharges. Vapours can form explosive mixtures with air. Flammable vapours can accumulate in head space of closed systems. Heating causes rise in pressure with risk of bursting.

**Advice on general occupational hygiene**

Remove contaminated, saturated clothing immediately. Draw up and observe skin protection programme.

Wash hands and face before breaks and after work and take a shower if necessary. When using do not eat, drink, smoke, sniff. Take off contaminated clothing and wash it before reuse. Always close containers tightly after the removal of product. Protect skin by using skin protective cream. Use protective skin cream before handling the product.

**Further information on handling**

Avoid contact with skin, eyes and clothes. General protection and hygiene measures: See section 8.

**7.2. Conditions for safe storage, including any incompatibilities****Requirements for storage rooms and vessels**

Keep container tightly closed. Keep locked up. Store in a place accessible by authorized persons only. Provide adequate ventilation as well as local exhaust at critical locations. Keep in a cool, well-ventilated place. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Keep container tightly closed in a cool, well-ventilated place. Keep/Store only in original container. Ensure adequate ventilation of the storage area.

Make sure spills can be contained (e.g. sump pallets or kerbed areas).

**Hints on joint storage**

Do not store together with: Oxidizing agent. Pyrophoric or self-heating substances. Do not store together with: Gas. Explosives. Flammable solids. Pyrophoric liquids and solids. Self-heating substances and mixtures. Substances or mixtures which, in contact with water, emit flammable gases. Oxidizing liquids. Oxidizing solids. ammonium nitrate. Self-reactive substances and mixtures. Organic peroxides. Non-combustible toxic substances. Radioactive substances. Infectious substances.

**Further information on storage conditions**

Keep the packing dry and well sealed to prevent contamination and absorption of humidity.

## Safety Data Sheet

according to UK REACH Regulation

### CARNOY's Fixative (Chloroform & Iron(III) Chloride) - A

Revision date: 21.08.2023

Product code: 11694.xxxxx

Page 6 of 17

Recommended storage temperature: 15-25 °C

Protect against: frost. UV-radiation/sunlight. heat. Humidity

#### 7.3. Specific end use(s)

See section 1.

### SECTION 8: Exposure controls/personal protection

#### 8.1. Control parameters

##### Exposure limits (EH40)

CAS No	Substance	ppm	mg/m <sup>3</sup>	fibres/ml	Category	Origin
64-19-7	Acetic acid	10	25		TWA (8 h)	WEL
		20	50		STEL (15 min)	WEL
78-93-3	Butan-2-one (methyl ethyl ketone)	200	600		TWA (8 h)	WEL
		300	899		STEL (15 min)	WEL
67-66-3	Chloroform	2	9.9		TWA (8 h)	WEL
64-17-5	Ethanol	1000	1920		TWA (8 h)	WEL

##### Biological Monitoring Guidance Values (EH40)

CAS No	Substance	Parameter	Value	Test material	Sampling time
78-93-3	Butan-2-one	butan-2-one	70 µmol/L	urine	Post shift

##### DNEL/DMEL values

CAS No	Substance	Exposure route	Effect	Value	
64-17-5	Ethanol	Worker DNEL, acute	inhalation	local	1900 mg/m <sup>3</sup>
		Worker DNEL, long-term	dermal	systemic	343 mg/kg bw/day
		Worker DNEL, long-term	inhalation	systemic	950 mg/m <sup>3</sup>
		Consumer DNEL, acute	inhalation	local	950 mg/m <sup>3</sup>
		Consumer DNEL, long-term	dermal	systemic	206 mg/kg bw/day
		Consumer DNEL, long-term	inhalation	systemic	114 mg/m <sup>3</sup>
		Consumer DNEL, long-term	oral	systemic	87 mg/kg bw/day
		67-66-3	trichloromethane	Worker DNEL, long-term	inhalation
Worker DNEL, acute	inhalation			systemic	333 mg/m <sup>3</sup>
Worker DNEL, long-term	inhalation			local	2,5 mg/m <sup>3</sup>
Worker DNEL, long-term	dermal			systemic	0,94 mg/kg bw/day
64-19-7	Acetic acid%			Worker DNEL, long-term	inhalation
		Worker DNEL, acute	inhalation	local	25 mg/m <sup>3</sup>
		Consumer DNEL, long-term	inhalation	local	25 mg/m <sup>3</sup>
		Consumer DNEL, acute	inhalation	local	25 mg/m <sup>3</sup>
		7705-08-0	Iron(III) chloride	Worker DNEL, long-term	dermal

## Safety Data Sheet

according to UK REACH Regulation

### CARNOY's Fixative (Chloroform & Iron(III) Chloride) - A

Revision date: 21.08.2023

Product code: 11694.xxxxx

Page 7 of 17

#### PNEC values

CAS No	Substance	Value
Environmental compartment		
64-17-5	Ethanol	
Freshwater		0,96 mg/l
Freshwater (intermittent releases)		2,75 mg/l
Marine water		0,79 mg/l
Marine water (intermittent releases)		2,75 mg/l
Freshwater sediment		3,6 mg/kg
Marine sediment		2,9 mg/kg
Secondary poisoning		0,72 mg/kg
Micro-organisms in sewage treatment plants (STP)		580 mg/l
Soil		0,63 mg/kg
67-66-3	trichloromethane	
Freshwater		0,146 mg/l
Freshwater (intermittent releases)		0,133 mg/l
Marine water		0,015 mg/l
Freshwater sediment		0,45 mg/kg
Marine sediment		0,09 mg/kg
Micro-organisms in sewage treatment plants (STP)		0,048 mg/l
Soil		0,56 mg/kg
64-19-7	Acetic acid%	
Freshwater		3,058 mg/l
Freshwater (intermittent releases)		30,58 mg/l
Marine water		0,306 mg/l
Freshwater sediment		11,36 mg/kg
Marine sediment		1,136 mg/kg
Micro-organisms in sewage treatment plants (STP)		85 mg/l
Soil		0,47 mg/kg

#### 8.2. Exposure controls



##### Appropriate engineering controls

If handled uncovered, arrangements with local exhaust ventilation have to be used. Do not breathe gas/fumes/vapour/spray. Provide adequate ventilation as well as local exhaustion at critical locations.

##### Individual protection measures, such as personal protective equipment

##### Eye/face protection

Suitable eye protection: goggles. Eye glasses with side protection EN 166

##### Hand protection

When handling with chemical substances, protective gloves must be worn with the CE-label including the four control digits. The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the

## Safety Data Sheet

according to UK REACH Regulation

### CARNOY's Fixative (Chloroform & Iron(III) Chloride) - A

Revision date: 21.08.2023

Product code: 11694.xxxxx

Page 8 of 17

supplier of these gloves. Tested protective gloves are to be worn:

Suitable material:

FKM (fluoro rubber) (0,4 mm, Breakthrough time  $\geq 480$  min):

The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Before using check leak tightness / impermeability. In the case of wanting to use the gloves again, clean them before taking off and air them well.

#### Skin protection

Flame-retardant protective clothing. Wear anti-static footwear and clothing . Protective clothing.

(flame-retardant)

Minimum standard for preventive measures while handling with working materials are specified in the TRGS 500 (D).

#### Respiratory protection

In case of inadequate ventilation wear respiratory protection. With correct and proper use, and under normal conditions, breathing protection is not required.

Respiratory protection necessary at:

Insufficient ventilation.

exceeding exposure limit values

generation/formation of aerosols

Suitable respiratory protective equipment: Self-contained respirator (breathing apparatus)

The filter class must be suitable for the maximum contaminant concentration (gas/vapour/aerosol/particulates) that may arise when handling the product. If the concentration is exceeded, self-contained breathing apparatus must be used.

#### Thermal hazards

Flame-retardant protective clothing. Wear anti-static footwear and clothing .

#### Environmental exposure controls

Do not allow to enter into surface water or drains.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Physical state:	liquid	
Colour:	colourless	
Odour:	characteristic	
Melting point/freezing point:		not determined
Boiling point or initial boiling point and boiling range:		61 °C
Flammability:		not determined
Lower explosion limits:		3,1 vol. %
Upper explosion limits:		27,7 vol. %
Flash point:		12 °C
Auto-ignition temperature:		400 °C
Decomposition temperature:		not determined
pH-Value:		not determined
Viscosity / kinematic:		not determined
Water solubility: (at 20 °C)		miscible.
Solubility in other solvents		miscible.
Partition coefficient n-octanol/water:		not determined
Vapour pressure: (at 20 °C)		211 hPa
Density (at 20 °C):		1,02 g/cm <sup>3</sup>



**Safety Data Sheet**

according to UK REACH Regulation

**CARNOY's Fixative (Chloroform & Iron(III) Chloride) - A**

Revision date: 21.08.2023

Product code: 11694.xxxxx

Page 9 of 17

Relative vapour density: not determined  
Particle characteristics: not applicable

**9.2. Other information****Information with regard to physical hazard classes****Explosive properties**

The product is not: Explosive. In case of insufficient ventilation and/or through use, explosive/highly flammable mixtures may develop.

Sustaining combustion: No data available

Self-ignition temperature

Gas: not determined

Oxidizing properties

none

**Other safety characteristics**

Evaporation rate: not determined

Solvent separation test: not determined

Solvent content: not determined

Solid content: not determined

Sublimation point: not determined

Softening point: not determined

Pour point: not determined

Viscosity / dynamic: not determined

(at 25 °C)

Flow time: not determined

**SECTION 10: Stability and reactivity****10.1. Reactivity**

Highly flammable. No information available.

**10.2. Chemical stability**

The product is stable under storage at normal ambient temperatures.

**10.3. Possibility of hazardous reactions**

Explosion risk in contact with: Oxidizing agents, strong. nitric acid. Hydrogenium peroxide.

Exothermic reactions with: Alkali metals. Alkaline earth metals. Reducing agents, strong.

**10.4. Conditions to avoid**

Keep away from sources of heat (e.g. hot surfaces), sparks and open flames. Vapours can form explosive mixtures with air. Keep away from heat. Protect from direct sunlight. Protect from moisture.

In use may form flammable/explosive vapour-air mixture.

Heating causes rise in pressure with risk of bursting. Recommended storage temperature: < 40 °C

**10.5. Incompatible materials**

Oxidizing agents. Strong acid. Base. Fluorine. Reducing agents. Nitric acid. Alkali metals. Halogenes. Sulphur dioxide (SO<sub>2</sub>). Hydrogenium peroxide. Bromine trifluoride. Chloroform. difluordioxide. isoprene. nitrosulphic acid. nitromethane. nitrosyl chloride (catalyst). nitrosyl perchlorate. peroxomonosulfuric acid. phosphoryl chloride.

**10.6. Hazardous decomposition products**

In case of fire may be liberated: Carbon monoxide Carbon dioxide (CO<sub>2</sub>). Hydrogen chloride (HCl). Chlorine (Cl<sub>2</sub>). Phosgene

**SECTION 11: Toxicological information****11.1. Information on hazard classes as defined in GB CLP Regulation****Acute toxicity**

Harmful if inhaled.

**Safety Data Sheet**

according to UK REACH Regulation

**CARNOY's Fixative (Chloroform & Iron(III) Chloride) - A**

Revision date: 21.08.2023

Product code: 11694.xxxxx

Page 10 of 17

**ATEmix calculated**

ATE (oral) 2095 mg/kg; ATE (dermal) &gt; 2000 mg/kg; ATE (inhalation vapour) 24,22 mg/l; ATE (inhalation dust/mist) 1,153 mg/l

CAS No	Chemical name				
	Exposure route	Dose	Species	Source	Method
64-17-5	Ethanol				
	oral	LD50 >5000 mg/kg	Rat	ECHA Dossier	
	dermal	LD50 >2000 mg/kg	Rabbit	ECHA Dossier	
	inhalation (4 h) vapour	LC50 124,7 mg/l	Rat	ECHA Dossier	
67-66-3	trichloromethane				
	oral	LD50 908 mg/kg	Rat	ECHA Dossier	OECD 401
	dermal	LD50 >3980 mg/kg	Rabbit	ECHA	
	inhalation (4 h) vapour	LC50 10,5 mg/l	Ratte	ECHA	
	inhalation dust/mist	ATE 0,5 mg/l			
64-19-7	Acetic acid%				
	oral	LD50 3530 mg/kg	Rat	GESTIS	
	inhalation (4 h) vapour	LC50 >40 mg/l	Rat	suppliers SDS.	
78-93-3	butanone				
	oral	LD50 2054 mg/kg	Ratte	SDB Lieferant	
	dermal	LD50 >2000 mg/kg	Rabbit	ECHA Dossier	
7705-08-0	Iron(III) chloride				
	oral	LD50 450 mg/kg	Rat	Gestis	
	dermal	LD50 >2000 mg/kg	Rabbit	Gestis	

**Irritation and corrosivity**

Causes skin irritation.

Causes serious eye irritation.

**Sensitising effects**

Contains Iron(III) chloride. May produce an allergic reaction.

**Carcinogenic/mutagenic/toxic effects for reproduction**

Suspected of causing cancer. (trichloromethane)

Suspected of damaging the unborn child. (trichloromethane)

Germ cell mutagenicity: Based on available data, the classification criteria are not met.

**STOT-single exposure**

Based on available data, the classification criteria are not met.

**STOT-repeated exposure**

Causes damage to organs through prolonged or repeated exposure. (trichloromethane)

**Aspiration hazard**

Based on available data, the classification criteria are not met.

**11.2. Information on other hazards**

## Safety Data Sheet

according to UK REACH Regulation

### CARNOY's Fixative (Chloroform & Iron(III) Chloride) - A

Revision date: 21.08.2023

Product code: 11694.xxxxx

Page 11 of 17

#### Endocrine disrupting properties

This product does not contain a substance that has endocrine disrupting properties with respect to humans as no components meets the criteria.

#### Other information

The mixture is classified as hazardous according to regulation (EC) No 1272/2008 [CLP]. Special hazards arising from the substance or mixture! Depending on the ingested quantity the following symptoms can be induced: a reduction of inhibitions, euphoria but also dysphoria, aggressiveness, impaired motoric skills, impaired responsiveness, blurred vision and fatigue.

## SECTION 12: Ecological information

### 12.1. Toxicity

Based on available data, the classification criteria are not met.

CAS No	Chemical name					
	Aquatic toxicity	Dose	[h]   [d]	Species	Source	Method
64-17-5	Ethanol					
	Acute fish toxicity	LC50 14200 mg/l	96 h	Pimephales promelas (fathead minnow)	ECHA Dossier	
	Acute algae toxicity	ErC50 275 mg/l	72 h	Chlorella vulgaris	ECHA Dossier	
	Acute crustacea toxicity	EC50 5012 mg/l	48 h	Ceriodaphnia dubia (water flea)	ECHA Dossier	
	Crustacea toxicity	NOEC 9,6 mg/l	9 d	Daphnia magna	ECHA Dossier	
67-66-3	trichloromethane					
	Acute fish toxicity	LC50 18,2 mg/l	96 h	Oncorhynchus mykiss	ECHA Dossier	
	Acute algae toxicity	ErC50 13,3 mg/l	72 h	Chlamydomonas reinhardtii	ECHA Dossier	
	Acute crustacea toxicity	EC50 152,2 mg/l	48 h	Crassostrea gigas	ECHA Dossier	
	Fish toxicity	NOEC 0,151 mg/l	275 d	Oryzias latipes	ECHA Dossier	
	Crustacea toxicity	NOEC 6,3 mg/l	21 d	Daphnia magna	ECHA Dossier	
	Acute bacteria toxicity	(EC50 0,48 mg/l)		Nitrosomonas sp. (24h)	ECHA Dossier	
64-19-7	Acetic acid%					
	Acute fish toxicity	LC50 >300 mg/l	96 h	Oncorhynchus mykiss	ECHA Dossier	
	Acute algae toxicity	ErC50 >300 mg/l	72 h	Skeletonema costatum	ECHA Dossier	
	Acute crustacea toxicity	EC50 >300 mg/l	48 h	Daphnia magna	ECHA Dossier	
78-93-3	butanone					
	Acute fish toxicity	LC50 2993 mg/l	96 h	Pimephales promelas	ECHA Dossier	OECD 203
	Acute algae toxicity	ErC50 1972 mg/l	72 h	Pseudokirchnerella subcapitata	ECHA Dossier	OECD 201
	Acute crustacea toxicity	EC50 308 mg/l	48 h	Daphnia magna	ECHA Dossier	OECD 202
7705-08-0	Iron(III) chloride					
	Acute fish toxicity	LC50 20,95-22,56 mg/l	96 h	Pimephales promelas (fathead minnow)	suppliers SDS.	
	Acute crustacea toxicity	EC50 27,9 mg/l	48 h	Daphnia magna (Big water flea)	suppliers SDS.	

## Safety Data Sheet

according to UK REACH Regulation

### CARNOY's Fixative (Chloroform & Iron(III) Chloride) - A

Revision date: 21.08.2023

Product code: 11694.xxxxx

Page 12 of 17

#### 12.2. Persistence and degradability

The product has not been tested.

CAS No	Chemical name			
	Method	Value	d	Source
	Evaluation			
64-17-5	Ethanol			
	other guideline	84%	20	ECHA Dossier
	Biodegradable.			
64-19-7	Acetic acid%			
	Other guideline	95%	5	suppliers SDS.
	Easily biodegradable (concerning to the criteria of the OECD)			
78-93-3	butanone			
		98%	28	ECHA Dossier
	Readily biodegradable (according to OECD criteria).			

#### 12.3. Bioaccumulative potential

The product has not been tested.

##### Partition coefficient n-octanol/water

CAS No	Chemical name	Log Pow
64-17-5	Ethanol	-0,31
67-66-3	trichloromethane	1,97
64-19-7	Acetic acid%	-0,17
78-93-3	butanone	0,3
7705-08-0	Iron(III) chloride	-4

##### BCF

CAS No	Chemical name	BCF	Species	Source
64-19-7	Acetic acid%	3,16		
7705-08-0	Iron(III) chloride	2756-9622		

#### 12.4. Mobility in soil

The product has not been tested.

#### 12.5. Results of PBT and vPvB assessment

The substances in the mixture do not meet the PBT/vPvB criteria according to UK REACH.

#### 12.6. Endocrine disrupting properties

This product does not contain a substance that has endocrine disrupting properties with respect to non-target organisms as no components meets the criteria.

#### 12.7. Other adverse effects

The product has not been tested.

##### Further information

Do not allow to enter into surface water or drains. Do not allow to enter into soil/subsoil.

## SECTION 13: Disposal considerations

#### 13.1. Waste treatment methods

##### Disposal recommendations

Do not allow to enter into surface water or drains. Do not allow to enter into soil/subsoil. Dispose of waste according to applicable legislation. Observe in addition any national regulations! Consult the local waste disposal expert about waste disposal. Non-contaminated packages may be recycled.

According to (EWC) European Waste Catalogue, allocation of waste identity numbers/waste descriptions must be carried out in a specific way for every industry and process.

**Safety Data Sheet**

according to UK REACH Regulation

**CARNOY's Fixative (Chloroform & Iron(III) Chloride) - A**

Revision date: 21.08.2023

Product code: 11694.xxxxx

Page 13 of 17

Control report for waste code/ waste marking according to (EWC) European Waste Catalogue:

**List of Wastes Code - residues/unused products**

160506 WASTES NOT OTHERWISE SPECIFIED IN THE LIST; gases in pressure containers and discarded chemicals; laboratory chemicals, consisting of or containing hazardous substances, including mixtures of laboratory chemicals; hazardous waste

**List of Wastes Code - used product**

160508 WASTES NOT OTHERWISE SPECIFIED IN THE LIST; gases in pressure containers and discarded chemicals; discarded organic chemicals consisting of or containing hazardous substances; hazardous waste

**List of Wastes Code - contaminated packaging**

150110 WASTE PACKAGING; ABSORBENTS, WIPING CLOTHS, FILTER MATERIALS AND PROTECTIVE CLOTHING NOT OTHERWISE SPECIFIED; packaging (including separately collected municipal packaging waste); packaging containing residues of or contaminated by hazardous substances; hazardous waste

**Contaminated packaging**

Hazardous waste according to Directive 2008/98/EC (waste framework directive). Handle contaminated packages in the same way as the substance itself.

**SECTION 14: Transport information**
**Land transport (ADR/RID)**

**14.1. UN number or ID number:** UN 1993  
**14.2. UN proper shipping name:** FLAMMABLE LIQUID, N.O.S.(ethanol)  
**14.3. Transport hazard class(es):** 3  
**14.4. Packing group:** II  
 Hazard label: 3



Classification code: F1  
 Special Provisions: 274 601 640D  
 Limited quantity: 1 L  
 Excepted quantity: E2  
 Transport category: 2  
 Hazard No: 33  
 Tunnel restriction code: D/E

**Inland waterways transport (ADN)**

**14.1. UN number or ID number:** UN 1993  
**14.2. UN proper shipping name:** FLAMMABLE LIQUID, N.O.S.(ethanol)  
**14.3. Transport hazard class(es):** 3  
**14.4. Packing group:** II  
 Hazard label: 3



Classification code: F1  
 Special Provisions: 274 601 640D  
 Limited quantity: 1 L  
 Excepted quantity: E2

**Marine transport (IMDG)**

**14.1. UN number or ID number:** UN 1993  
**14.2. UN proper shipping name:** FLAMMABLE LIQUID, N.O.S.(ethanol)

**Safety Data Sheet**

according to UK REACH Regulation

**CARNOY's Fixative (Chloroform & Iron(III) Chloride) - A**

Revision date: 21.08.2023

Product code: 11694.xxxxx

Page 14 of 17

**14.3. Transport hazard class(es):** 3

**14.4. Packing group:** II

Hazard label: 3



Special Provisions: 274

Limited quantity: 1 L

Excepted quantity: E2

EmS: F-E, S-E

**Air transport (ICAO-TI/IATA-DGR)**
**14.1. UN number or ID number:** UN 1993

**14.2. UN proper shipping name:** FLAMMABLE LIQUID, N.O.S.(ethanol)

**14.3. Transport hazard class(es):** 3

**14.4. Packing group:** II

Hazard label: 3



Special Provisions: A3

Limited quantity Passenger: 1 L

Passenger LQ: Y341

Excepted quantity: E2

IATA-packing instructions - Passenger: 353

IATA-max. quantity - Passenger: 5 L

IATA-packing instructions - Cargo: 364

IATA-max. quantity - Cargo: 60 L

**14.5. Environmental hazards**

ENVIRONMENTALLY HAZARDOUS: No

**14.6. Special precautions for user**

Warning: Combustible liquid. Refer to section 6-8

**14.7. Maritime transport in bulk according to IMO instruments**

not relevant

**SECTION 15: Regulatory information**
**15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture**
**EU regulatory information**

Restrictions on use (REACH, annex XVII):

Entry 3, Entry 40, Entry 75

2010/75/EU (VOC): not determined

2004/42/EC (VOC): not determined

Information according to 2012/18/EU (SEVESO III): P5c FLAMMABLE LIQUIDS

**Additional information**

The mixture is classified as hazardous according to regulation (EC) No 1272/2008 [CLP].

**National regulatory information**

**Safety Data Sheet**

according to UK REACH Regulation

**CARNOY's Fixative (Chloroform & Iron(III) Chloride) - A**

Revision date: 21.08.2023

Product code: 11694.xxxxx

Page 15 of 17

Employment restrictions:	Observe restrictions to employment for juveniles according to the 'juvenile work protection guideline' (94/33/EC). Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers.
Water hazard class (D):	3 - highly hazardous to water

**15.2. Chemical safety assessment**

For the following substances of this mixture a chemical safety assessment has been carried out:

Ethanol  
trichloromethane  
Acetic acid%  
butanone  
Iron(III) chloride

**SECTION 16: Other information****Changes**

This data sheet contains changes from the previous version in section(s): 1,2,4,5,6,7,8,9,11,12,13,14,15,16.

Rev. 2,0; 26.01.2023: Individual safety data sheet based on 10159\_collect

Rev. 2,1; 19.06.2023 general adjustment(s)

Rev. 2,2; 21.08.2023; general adjustment(s)

**Abbreviations and acronyms**

ADR: Accord européen sur le transport des marchandises dangereuses par Route

AwSV: Verordnung über Anlagen zum Umgang mit wassergefährdenden Stoffen

AGW: Arbeitsplatzgrenzwert

AVV: Abfallverzeichnisverordnung

CAS Chemical Abstracts Service

CLP: Classification, Labelling and Packaging of substances and mixtures

DNEL: Derived No Effect Level

d: day(s)

EAKV: Europäisches Abfallverzeichnis gemäß Entwurf Abfallverzeichnisverordnung

EINECS: European Inventory of Existing Commercial chemical Substances

ELINCS: European List of Notified Chemical Substances

ECHA: European Chemicals Agency

EWC: European Waste Catalogue

IARC: INTERNATIONAL AGENCY FOR RESEARCH ON CANCER

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)

ICAO: International Civil Aviation Organization

ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

GefStoffV: Gefahrstoffverordnung (Ordinance on Hazardous Substances, Germany)

h: hour

LOAEL: Lowest observed adverse effect level

LOAEC: Lowest observed adverse effect concentration

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

NOAEL: No observed adverse effect level

NOAEC: No observed adverse effect level

NLP: No-Longer Polymers

N/A: not applicable

OECD: Organisation for Economic Co-operation and Development

PNEC: predicted no effect concentration

PBT: Persistent bioaccumulative toxic

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de

**Safety Data Sheet**

according to UK REACH Regulation

**CARNOY's Fixative (Chloroform & Iron(III) Chloride) - A**

Revision date: 21.08.2023

Product code: 11694.xxxxx

Page 16 of 17

fer (Regulations Concerning the International Transport of Dangerous Goods by Rail )  
 REACH: Registration, Evaluation, Authorisation of Chemicals  
 SVHC: substance of very high concern  
 TRGS Technische Regeln fuer Gefahrstoffe  
 UN: United Nations  
 VOC: Volatile Organic Compounds  
 VwVwS: Verwaltungsvorschrift wassergefaehrdender Stoffe  
 WGK: Wassergefaehrdungsklasse  
 CLP: Classification, labelling and Packaging  
 REACH: Registration, Evaluation and Authorization of Chemicals  
 GHS: Globally Harmonised System of Classification, Labelling and Packaging of Chemicals  
 UN: United Nations  
 CAS: Chemical Abstracts Service  
 DNEL: Derived No Effect Level  
 DMEL: Derived Minimal Effect Level  
 PNEC: Predicted No Effect Concentration  
 ATE: Acute toxicity estimate  
 LL50: Lethal loading, 50%  
 EL50: Effect loading, 50%  
 EC50: Effective Concentration 50%  
 ErC50: Effective Concentration 50%, growth rate  
 NOEC: No Observed Effect Concentration  
 BCF: Bio-concentration factor  
 PBT: persistent, bioaccumulative, toxic  
 vPvB: very persistent, very bioaccumulative  
 ADR: Accord européen sur le transport des marchandises dangereuses par Route  
 (European Agreement concerning the International Carriage of Dangerous Goods by Road)  
 RID: Regulations concerning the international carriage of dangerous goods by rail  
 ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways  
 (Accord européen relatif au transport international des marchandises dangereuses par voies de navigation  
 intérieures)  
 EmS: Emergency Schedules  
 MFAG: Medical First Aid Guide  
 MARPOL: International Convention for the Prevention of Marine Pollution from Ships  
 IBC: Intermediate Bulk Container  
 For abbreviations and acronyms, see table at <http://abbrev.esdscom.eu>  
 For abbreviations and acronyms, see: ECHA Guidance on information requirements and chemical safety  
 assessment, chapter R.20 (Table of terms and abbreviations).

**Classification for mixtures and used evaluation method according to GB CLP Regulation**

Classification	Classification procedure
Flam. Liq. 2; H225	On basis of test data
Acute Tox. 4; H332	Calculation method
Skin Irrit. 2; H315	Calculation method
Eye Irrit. 2; H319	Calculation method
Carc. 2; H351	Calculation method
Repr. 2; H361d	Calculation method
STOT RE 1; H372	Calculation method

**Relevant H and EUH statements (number and full text)**

H225	Highly flammable liquid and vapour.
H226	Flammable liquid and vapour.
H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.



**Safety Data Sheet**

according to UK REACH Regulation

**CARNOY's Fixative (Chloroform & Iron(III) Chloride) - A**

Revision date: 21.08.2023

Product code: 11694.xxxxx

Page 17 of 17

H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H331	Toxic if inhaled.
H332	Harmful if inhaled.
H336	May cause drowsiness or dizziness.
H351	Suspected of causing cancer.
H361d	Suspected of damaging the unborn child.
H372	Causes damage to organs through prolonged or repeated exposure.
EUH066	Repeated exposure may cause skin dryness or cracking.
EUH208	Contains Iron(III) chloride. May produce an allergic reaction.

**Further Information**

The information is based on the present level of our knowledge. It does not, however, give assurance of product properties and establishes no contract legal rights. The receiver of our product is singularly responsible for adhering to existing laws and regulations. Classification according to Regulation (EC) No 1272/2008 [CLP]

- Classification procedure:

Health hazards: Calculation method.

Environmental hazards: Calculation method.

Physical hazards: On basis of test data and / or calculated and / or estimated.

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.

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*(The data for the hazardous ingredients were taken respectively from the last version of the sub-contractor's safety data sheet.)*