

SAFETY DATA SHEET

according to Occupational Safety And Health
(Classification, Labelling And Safety Data Sheet Of
Hazardous Chemicals) Regulations 2013 (CLASS 2013)

Revision Date 12.12.2019

Version 4.0

SECTION 1. Identification of the substance/mixture and of the company/undertaking**1.1 Product identifier**

Catalogue No.	107024
Product name	Chloroform for analysis EMPARTA® ACS
REACH Registration Number	A registration number is not available for this substance as the substance or its use are exempted from registration according to Article 2 REACH Regulation (EC) No 1907/2006, the annual tonnage does not require a registration or the registration is envisaged for a later registration deadline.
CAS-No.	67-66-3

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

Identified uses	Reagent for analysis For additional information on uses please refer to the Merck Chemicals portal (www.merckgroup.com).
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1.3 Details of the supplier of the safety data sheet

Company	Merck KGaA * 64271 Darmstadt *Germany* Telefon: +49 6151 72-0
Responsible Department	LS-QHC * e-mail: prodsafe@merckgroup.com
Regional representation	Merck Sdn. Bhd. (Co. No: 178145), No. 4, Jalan U1/26, Section U1, Hicom Glenmarie Industrial Park, 40150 Shah Alam, Selangor. Tel: 03-74943688 Fax: 03-74910850

1.4 Emergency telephone number Customer Call Centre: + 62 0800 140 1253 (Toll Free)**SECTION 2. Hazards identification****2.1 Classification of the substance or mixture****Classification according to CLASS regulations 2013**

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according to Regulation (EC) No. 1907/2006

Catalogue No.
Product name

107024
Chloroform for analysis EMPARTA® ACS

Acute toxicity, Category 4, Oral, H302
Acute toxicity, Category 3, Inhalation, H331
Skin irritation, Category 2, H315
Eye irritation, Category 2, H319
Carcinogenicity, Category 2, H351
Reproductive toxicity, Category 2, H361d
Specific target organ toxicity - repeated exposure, Category 1, Liver, Kidney, H372
For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 Label elements

Labelling according to CLASS regulations 2013

Hazard pictograms



Signal word
Danger

Hazard statements

H302 Harmful if swallowed.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H331 Toxic if inhaled.
H351 Suspected of causing cancer.
H361d Suspected of damaging the unborn child.
H372 Causes damage to organs (Liver, Kidney) through prolonged or repeated exposure.

Precautionary statements

Response
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.
P308 + P310 IF exposed or concerned: immediately call a POISON CENTER or doctor/physician.

For use in industrial installations only.

Reduced labelling (≤125 ml)

Hazard pictograms



Signal word
Danger

Hazard statements

H331 Toxic if inhaled.

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

Precautionary statements

P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P308 + P310 IF exposed or concerned: immediately call a POISON CENTER or doctor/ physician.

CAS-No. 67-66-3

2.3 Other hazards

None known.

SECTION 3. Composition/information on ingredients

3.1 Substance

Formula	CHCl ₃	CHCl ₃ (Hill)
EC-No.	200-663-8	
Molar mass	119.38 g/mol	

Hazardous components according to CLASS regulations 2013

Chemical name (Concentration)

CAS-No.	Registration number	Classification
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chloroform (>= 50 % - <= 100 %)

Substance does not meet the criteria for PBT or vPvB according to Regulation (EC) No 1907/2006, Annex XIII.

67-66-3	*)	Carcinogenicity, Category 2, H351 Reproductive toxicity, Category 2, H361d Acute toxicity, Category 3, H331 Acute toxicity, Category 4, H302 Specific target organ toxicity - repeated exposure, Category 1, H372 Eye irritation, Category 2, H319 Skin irritation, Category 2, H315
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ethanol (>= 1 % - < 3 %)

Substance does not meet the criteria for PBT or vPvB according to Regulation (EC) No 1907/2006, Annex XIII.

64-17-5	*)	Flammable liquid, Category 2, H225 Eye irritation, Category 2, H319
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*) A registration number is not available for this substance as the substance or its use are exempted from registration according to Article 2 REACH Regulation (EC) No 1907/2006, the annual tonnage does not require a registration or the registration is envisaged for a later registration deadline.

For the full text of the H-Statements mentioned in this Section, see Section 16.

3.2 Mixture

Not applicable

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SECTION 4. First aid measures

4.1 Description of first aid measures

General advice

First aider needs to protect himself.

After inhalation: fresh air. Immediately call in physician. If breathing stops: immediately apply artificial respiration, if necessary also oxygen.

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower. Consult a physician.

After eye contact: rinse out with plenty of water. Call in ophthalmologist. Remove contact lenses.

After swallowing: caution if victim vomits. Risk of aspiration! Keep airways free. Pulmonary failure possible after aspiration of vomit. Call a physician immediately. Subsequently administer: activated charcoal (20 - 40 g in 10% slurry).

4.2 Most important symptoms and effects, both acute and delayed

Cough, Shortness of breath, respiratory arrest, Dizziness, narcosis, agitation, spasms, inebriation, Nausea, Vomiting, Stomach/intestinal disorders, cardiovascular disorders, Headache, ataxia (impaired locomotor coordination)

Drying-out effect resulting in rough and chapped skin.
irritant effects

4.3 Indication of any immediate medical attention and special treatment needed

Laxative: Sodium sulfate (1 tablespoon/1/4 l water).

SECTION 5. Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media

For this substance/mixture no limitations of extinguishing agents are given.

5.2 Special hazards arising from the substance or mixture

Not combustible.

Ambient fire may liberate hazardous vapours.

Fire may cause evolution of:

Hydrogen chloride gas, Phosgene

5.3 Advice for firefighters

Special protective equipment for firefighters

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

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Further information

Suppress (knock down) gases/vapours/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Do not breathe vapours, aerosols. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

Advice for emergency responders:

Protective equipment see section 8.

6.2 Environmental precautions

Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up carefully with liquid-absorbent material (e.g. Chemizorb®). Dispose of properly. Clean up affected area.

6.4 Reference to other sections

Indications about waste treatment see section 13.

SECTION 7. Handling and storage

7.1 Precautions for safe handling

Advice on safe handling

Observe label precautions.

Work under hood. Do not inhale substance/mixture. Avoid generation of vapours/aerosols.

Hygiene measures

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions

Protected from light.

Tightly closed. Keep in a well-ventilated place. Keep locked up or in an area accessible only to qualified or authorised persons.

Recommended storage temperature see product label.

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

SECTION 8. Exposure controls/personal protection

8.1 Control parameters

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kloroform (67-66-3)

MY OEL	Time Weighted	10 ppm
	Average (TWA):	49 mg/m ³

etanol (64-17-5)

MY OEL	Time Weighted	1,000 ppm
	Average (TWA):	1,880 mg/m ³

8.2 Exposure controls

Engineering measures

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

See section 7.1.

Individual protection measures

Protective clothing needs to be selected specifically for the workplace, depending on concentrations and quantities of the hazardous substances handled. The chemical resistance of the protective equipment should be enquired at the respective supplier.

Eye/face protection

Safety glasses

Hand protection

full contact:

Glove material:	Viton (R)
Glove thickness:	0.70 mm
Break through time:	480 min

splash contact:

Glove material:	butyl-rubber
Glove thickness:	0.7 mm
Break through time:	10 min

The protective gloves to be used must comply with the specifications of EC Directive 89/686/EEC and the related standard EN374, for example KCL 890 Vitoject® (full contact), KCL 898 Butoject® (splash contact).

The breakthrough times stated above were determined by KCL in laboratory tests acc. to EN374 with samples of the recommended glove types.

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

Other protective equipment

protective clothing

Respiratory protection

required when vapours/aerosols are generated.

Recommended Filter type: Filter AX (EN 371)

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The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

Environmental exposure controls

Do not let product enter drains.

SECTION 9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Form	liquid
Colour	colourless
Odour	sweet
Odour Threshold	84.9 - 201.5 ppm
pH	No information available.
Melting point	-63 °C
Boiling point/boiling range	ca. 61 °C at 1,013 hPa
Flash point	Method: DIN 51755 Part 1 does not flash
Evaporation rate	No information available.
Flammability (solid, gas)	No information available.
Lower explosion limit	Not applicable
Upper explosion limit	Not applicable
Vapour pressure	211 hPa at 20 °C
Relative vapour density	4.25
Density	1.48 g/cm ³ at 20 °C
Relative density	No information available.
Water solubility	8.7 g/l at 23 °C Method: OECD Test Guideline 105

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Partition coefficient: n-octanol/water	log Pow: 2 (25 °C) (experimental) (IUCLID) Bioaccumulation is not expected.
Auto-ignition temperature	No information available.
Decomposition temperature	Distillable in an undecomposed state at normal pressure.
Viscosity, dynamic	0.57 mPa.s at 20 °C
Explosive properties	Not classified as explosive.
Oxidizing properties	none

9.2 Other data

Ignition temperature	not combustible
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SECTION 10. Stability and reactivity

10.1 Reactivity

See section 10.3

10.2 Chemical stability

heat-sensitive
Sensitivity to light

Stabilizer
ethanol

10.3 Possibility of hazardous reactions

Risk of explosion with:

Ammonia, Amines, nitrogen oxides, bases, Oxygen, alkali amides, organic nitro compounds, strong alkalis, Fluorine, peroxi compounds, Alkaline earth metals, Alkali metals, Powdered metals

Methanol, with, alcoholates

Methanol, with, strong alkalis

Iron, in powder form

various alloys, sensitive to shock

Methanol, with, Sodium hydroxide

magnesium, in powder form

Oxygen, with, alkali compounds

Aluminium, in powder form

Acetone, with, alkali compounds

Potassium, sensitive to shock

sodium, sensitive to shock

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Product name

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Violent reactions possible with:

phosphines, bis(dimethylamino)dimethyl tin, nonmetallic hydrogen compounds,
Powdered metals, Light metals, Ketones, mineral acids, Strong oxidizing agents,
semimetallic hydrogen compounds

10.4 Conditions to avoid

no information available

10.5 Incompatible materials

rubber, various plastics

10.6 Hazardous decomposition products

in the event of fire: See section 5.

SECTION 11. Toxicological information

11.1 Information on toxicological effects

Acute oral toxicity

LD50 Rat: 695 mg/kg

(RTECS)

Symptoms: Nausea, Vomiting, Risk of aspiration upon vomiting., Aspiration may
cause pulmonary oedema and pneumonitis.

Acute inhalation toxicity

Acute toxicity estimate: 0.51 mg/l; dust/mist

Expert judgement

Symptoms: Cough, Shortness of breath, Possible damages:, mucosal irritations

Acute dermal toxicity

LD50 Rabbit: > 3,980 mg/kg

(IUCLID)

Skin irritation

Rabbit

Result: slight irritation

(IUCLID)

Drying-out effect resulting in rough and chapped skin.

Causes skin irritation.

Eye irritation

Causes serious eye irritation.

Sensitisation

This information is not available.

Germ cell mutagenicity

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Product name

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Genotoxicity in vitro

Ames test

Salmonella typhimurium

Result: negative

Method: OECD Test Guideline 471

Carcinogenicity

This information is not available.

Reproductive toxicity

This information is not available.

Teratogenicity

This information is not available.

CMR effects

Carcinogenicity:

Suspected of causing cancer.

Teratogenicity:

Suspected of damaging the unborn child.

Specific target organ toxicity - single exposure

This information is not available.

Specific target organ toxicity - repeated exposure

Causes damage to organs through prolonged or repeated exposure.

Target Organs: Liver, Kidney

Aspiration hazard

This information is not available.

11.2 Further information

Systemic effects:

After absorption:

Dizziness, inebriation, agitation, spasms, narcosis, respiratory arrest

After long-term exposure to the chemical:

drop in blood pressure, Headache, ataxia (impaired locomotor coordination),

Stomach/intestinal disorders, cardiovascular disorders

Damage to:

Liver, Kidney, Cardiac

Effect potentiated by: ethanol

Other dangerous properties can not be excluded.

This substance should be handled with particular care.

SECTION 12. Ecological information

12.1 Toxicity

Toxicity to fish

LC50 *Lepomis macrochirus* (Bluegill sunfish): 18 mg/l; 96 h
(IUCLID)

Toxicity to daphnia and other aquatic invertebrates

EC50 *Daphnia magna* (Water flea): 79 mg/l; 48 h
(IUCLID)

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EC5 *E. sulcatum*: > 6,560 mg/l; 72 h
(IUCLID) (maximum permissible toxic concentration)

Toxicity to algae

IC5 *Scenedesmus quadricauda* (Green algae): 1,100 mg/l; 8 d
(IUCLID) (maximum permissible toxic concentration)

Toxicity to bacteria

EC5 *Pseudomonas putida*: 125 mg/l; 16 h
(IUCLID) (maximum permissible toxic concentration)

EC50 activated sludge: 1,010 mg/l; 3 h
OECD Test Guideline 209

12.2 Persistence and degradability

Biodegradability

0 %; 14 d
OECD Test Guideline 301C
Not readily biodegradable.

12.3 Bioaccumulative potential

Partition coefficient: n-octanol/water

log Pow: 2 (25 °C)
(experimental)

(IUCLID) Bioaccumulation is not expected.

12.4 Mobility in soil

Distribution among environmental compartments

Adsorption/Soil

log K_{oc}: 1.72
(experimental)

Mobile in soils

12.5 Results of PBT and vPvB assessment

Substance does not meet the criteria for PBT or vPvB according to Regulation (EC) No 1907/2006, Annex XIII.

12.6 Other adverse effects

Henry constant

14084 Pa·m³/mol

Method: (experimental)

(IUCLID) Distribution preferentially in air.

Discharge into the environment must be avoided.

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SECTION 13. Disposal considerations

Waste treatment methods

Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself.

See www.retrologistik.com for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

According to Quality Environment Regulation (Scheduled Waste) 2005, waste need to be sent to designated premise for recycle, treatment or disposal. Please contact Kualiti Alam for waste classification and correct disposal method.

SECTION 14. Transport information

Land transport (ADR/RID)

14.1 UN number	UN 1888
14.2 Proper shipping name	CHLOROFORM
14.3 Class	6.1
14.4 Packing group	III
14.5 Environmentally hazardous	--
14.6 Special precautions for user	yes
Tunnel restriction code	E

Inland waterway transport (ADN)

Not relevant

Air transport (IATA)

14.1 UN number	UN 1888
14.2 Proper shipping name	CHLOROFORM
14.3 Class	6.1
14.4 Packing group	III
14.5 Environmentally hazardous	--
14.6 Special precautions for user	no

Sea transport (IMDG)

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according to Regulation (EC) No. 1907/2006

Catalogue No.	107024
Product name	Chloroform for analysis EMPARTA® ACS

14.1 UN number	UN 1888
14.2 Proper shipping name	CHLOROFORM
14.3 Class	6.1
14.4 Packing group	III
14.5 Environmentally hazardous	--
14.6 Special precautions for user	yes
EmS	F-A S-A
14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	
Not relevant	

SECTION 15. Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

All national and local regulations, including Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013, if applicable to the use, should be observed.

National legislation

Storage class	6.1 D
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15.2 Chemical safety assessment

For this product a chemical safety assessment was not carried out.

SECTION 16. Other information

Full text of H-Statements referred to under sections 2 and 3.

H225	Highly flammable liquid and vapour.
H302	Harmful if swallowed.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H331	Toxic if inhaled.
H351	Suspected of causing cancer.
H361d	Suspected of damaging the unborn child.
H372	Causes damage to organs through prolonged or repeated exposure.

Training advice

Provide adequate information, instruction and training for operators.

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Labelling

Hazard pictograms



Signal word
Danger

Hazard statements

H302 Harmful if swallowed.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H331 Toxic if inhaled.
H351 Suspected of causing cancer.
H361 Suspected of damaging fertility or the unborn child.
H372 Causes damage to organs (Liver, Kidney) through prolonged or repeated exposure.

Precautionary statements

Response
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.
P308 + P310 IF exposed or concerned: immediately call a POISON CENTER or doctor/physician.

Further information

For use in industrial installations only.

Key or legend to abbreviations and acronyms used in the safety data sheet

Used abbreviations and acronyms can be looked up at www.wikipedia.org.

Regional representation

Merck Sdn. Bhd. (Co. No: 178145), No. 4, Jalan U1/26, Section U1, Hicom Glenmarie Industrial Park, 40150 Shah Alam, Selangor. Tel: 03-74943688 Fax: 03-74910850

The information contained herein is based on the present state of our knowledge. It characterises the product with regard to the appropriate safety precautions. It does not represent a guarantee of any properties of the product.

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