

## SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

### 1.1. Product identifier

Product Description:	<b>1-Chloro-4-nitrobenzene</b>
Cat No. :	<b>A15396</b>
Synonyms	p-Nitrochlorobenzene; PNCB.
Index No	610-005-00-5
CAS No	100-00-5
Molecular Formula	C6 H4 Cl N O2
REACH registration number	-

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

Recommended Use	Laboratory chemicals.
Uses advised against	No Information available

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

#### Company

Thermo Fisher (Kandel) GmbH  
Erlenbachweg 2, 76870 Kandel, Germany  
Tel: +49 (0) 721 84007 280  
Fax: +49 (0) 721 84007 300

**Swiss distributor** - Fisher Scientific AG  
Neuhofstrasse 11, CH 4153 Reinach  
Tel: +41 (0) 56 618 41 11  
<https://www.fishersci.ch/ch/en/customer-help-support/forms/email-us.html>

E-mail address begel.sdsdesk@thermofisher.com

### 1.4. 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

customers in Switzerland:  
Tox Info Suisse Emergency Number: **145 (24hr)**  
Tox Info Suisse: +41-44 251 51 51 (Emergency number from abroad)  
Chemtrec (24h) Toll-Free: 0800 564 402  
Chemtrec Local: +41-43 508 20 11 (Zurich)

## SECTION 2: HAZARDS IDENTIFICATION

### 2.1. Classification of the substance or mixture

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## CLP Classification - Regulation (EC) No 1272/2008

### Physical hazards

Based on available data, the classification criteria are not met

### Health hazards

Acute oral toxicity	Category 3 (H301)
Acute dermal toxicity	Category 3 (H311)
Acute Inhalation Toxicity - Dusts and Mists	Category 3 (H331)
Germ Cell Mutagenicity	Category 2 (H341)
Carcinogenicity	Category 2 (H351)
Specific target organ toxicity - (repeated exposure)	Category 2 (H373)

### Environmental hazards

Chronic aquatic toxicity	Category 2 (H411)
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Full text of Hazard Statements: see section 16

## 2.2. Label elements



Signal Word

Danger

### Hazard Statements

H341 - Suspected of causing genetic defects  
H351 - Suspected of causing cancer  
H373 - May cause damage to organs through prolonged or repeated exposure  
H411 - Toxic to aquatic life with long lasting effects  
H301 + H311 + H331 - Toxic if swallowed, in contact with skin or if inhaled

### Precautionary Statements

P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician  
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  
P311 - Call a POISON CENTER or doctor/physician  
P280 - Wear protective gloves/protective clothing/eye protection/face protection

## 2.3. Other hazards

Toxic to terrestrial vertebrates  
This product does not contain any known or suspected endocrine disruptors

## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

### 3.1. Substances

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Component	CAS No	EC No	Weight %	CLP Classification - Regulation (EC) No 1272/2008
Benzene, 1-chloro-4-nitro-	100-00-5	EEC No. 202-809-6	99	Acute Tox. 3 (H301) Acute Tox. 3 (H311) Acute Tox. 3 (H331) Muta. 2 (H341) Carc. 2 (H351) STOT RE 2 (H373) Aquatic Chronic 2 (H411)

REACH registration number	-
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Full text of Hazard Statements: see section 16

## SECTION 4: FIRST AID MEASURES

### 4.1. Description of 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. Immediate medical attention is required.
Skin Contact	Wash off immediately with plenty of water for at least 15 minutes. Immediate medical attention is required.
Ingestion	Do NOT induce vomiting. Call a physician or poison control center immediately.
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.
Self-Protection of the First Aider	Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination.

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

None reasonably foreseeable.

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

Notes to Physician	Treat symptomatically.
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## SECTION 5: FIREFIGHTING MEASURES

### 5.1. Extinguishing media

#### Suitable Extinguishing Media

Water spray, carbon dioxide (CO<sub>2</sub>), dry chemical, alcohol-resistant foam.

#### Extinguishing media which must not be used for safety reasons

No information available.

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

Dust can form an explosive mixture with air. Risk of explosion if heated under confinement. Thermal decomposition can lead to release of irritating gases and vapors. Keep product and empty container away from heat and sources of ignition.

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## Hazardous Combustion Products

Nitrogen oxides (NO<sub>x</sub>), Carbon monoxide (CO), Carbon dioxide (CO<sub>2</sub>), Chlorine, Phosgene, Hydrogen chloride gas.

### 5.3. Advice 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

### 6.1. Personal precautions, protective equipment and emergency procedures

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

### 6.2. Environmental precautions

Do not flush into surface water or sanitary sewer system.

### 6.3. Methods and material for containment and cleaning up

Sweep up and shovel into suitable containers for disposal. Avoid dust formation.

### 6.4. Reference to other sections

Refer to protective measures listed in Sections 8 and 13.

## SECTION 7: HANDLING AND STORAGE

### 7.1. Precautions for safe handling

Wear personal protective equipment/face protection. Avoid dust formation. Do not get in eyes, on skin, or on clothing. Use only under a chemical fume hood. Do not breathe (dust, vapor, mist, gas). Do not ingest. If swallowed then seek immediate medical assistance.

#### Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice. Keep away from food, drink and animal feeding stuffs. Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Wash hands before breaks and after work.

### 7.2. Conditions for safe storage, including any incompatibilities

Keep in a dry, cool and well-ventilated place. Keep container tightly closed.

**Technical Rules for Hazardous Substances (TRGS) 510**  
**Storage Class (LGK) (Germany)**

Storage Class/LGK 6.1C

**Switzerland - Storage of hazardous substances**

SC 6.1  
<https://www.kvu.ch/de/themen/stoffe-und-produkte>  
<https://www.kvu.ch/fr/themes/substances-et-produits>  
<https://www.kvu.ch/it/temi/sostanze-e-prodotti> Storage class -

### 7.3. Specific end use(s)

Use in laboratories

## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1. Control parameters

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## Exposure limits

List source(s): **UK** - EH40/2005 Work Exposure Limits, Forth edition. Published 2020. **IRE** - 2010 Code of Practice for the Safety, Health and Welfare at Work (Chemical Agents) Regulations 2001. Published by the Health and Safety Authority. **CH** - The Government of Switzerland has set a directive on limit values for working materials (Grenzwerte am Arbeitsplatz) which is based on the Swiss Federal Regulation "Verordnung über die Verhütung von Unfällen und Berufskrankheiten". This directive is administered, periodically revised and enforced by SUVA (Swiss National Accident Insurance Fund).

Component	European Union	The United Kingdom	France	Belgium	Spain
Benzene, 1-chloro-4-nitro-		STEL: 2 mg/m <sup>3</sup> 15 min TWA: 1 mg/m <sup>3</sup> 8 hr Skin		TWA: 0.1 ppm 8 uren TWA: 0.65 mg/m <sup>3</sup> 8 uren Huid	TWA / VLA-ED: 0.1 ppm (8 horas) TWA / VLA-ED: 0.65 mg/m <sup>3</sup> (8 horas) Piel

Component	Italy	Germany	Portugal	The Netherlands	Finland
Benzene, 1-chloro-4-nitro-		Haut	TWA: 0.1 ppm 8 horas Pele		TWA: 1 mg/m <sup>3</sup> 8 tunteina STEL: 3 mg/m <sup>3</sup> 15 minuutteina Iho

Component	Austria	Denmark	Switzerland	Poland	Norway
Benzene, 1-chloro-4-nitro-	Haut MAK-KZGW: 0.3 ppm 15 Minuten MAK-KZGW: 2 mg/m <sup>3</sup> 15 Minuten MAK-TMW: 0.075 ppm 8 Stunden MAK-TMW: 0.5 mg/m <sup>3</sup> 8 Stunden	TWA: 0.1 ppm 8 timer TWA: 0.64 mg/m <sup>3</sup> 8 timer STEL: 0.2 ppm 15 minutter STEL: 1.28 mg/m <sup>3</sup> 15 minutter Hud	Haut/Peau TWA: 0.075 ppm 8 Stunden TWA: 0.5 mg/m <sup>3</sup> 8 Stunden	TWA: 0.6 mg/m <sup>3</sup> 8 godzinach	TWA: 1 mg/m <sup>3</sup> 8 timer STEL: 3 mg/m <sup>3</sup> 15 minutter. value calculated Hud

Component	Bulgaria	Croatia	Ireland	Cyprus	Czech Republic
Benzene, 1-chloro-4-nitro-	TWA: 1.0 mg/m <sup>3</sup>	TWA-GVI: 1 mg/m <sup>3</sup> 8 satima. STEL-KGVI: 2 mg/m <sup>3</sup> 15 minutama.	TWA: 1 mg/m <sup>3</sup> 8 hr. STEL: 2 mg/m <sup>3</sup> 15 min Skin		TWA: 1 mg/m <sup>3</sup> 8 hodinách. Potential for cutaneous absorption Ceiling: 2 mg/m <sup>3</sup>

Component	Estonia	Gibraltar	Greece	Hungary	Iceland
Benzene, 1-chloro-4-nitro-			skin - potential for cutaneous absorption STEL: 2 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup>	STEL: 2 mg/m <sup>3</sup> 15 percekben. CK TWA: 0.5 mg/m <sup>3</sup> 8 órában. AK lehetséges borön keresztül felszívódás	TWA: 0.1 ppm 8 klukkustundum. TWA: 0.64 mg/m <sup>3</sup> 8 klukkustundum. Skin notation Ceiling: 0.2 ppm Ceiling: 1.28 mg/m <sup>3</sup>

Component	Latvia	Lithuania	Luxembourg	Malta	Romania
Benzene, 1-chloro-4-nitro-					Skin notation STEL: 0.16 ppm 15 minute STEL: 1 mg/m <sup>3</sup> 15 minute

## Biological limit values

This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies

Component	European Union	United Kingdom	France	Spain	Germany
Benzene, 1-chloro-4-nitro-				Methemoglobin: 1.5 % Methemoglobin in total hemoglobin blood end of shift	

## Monitoring methods

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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.  
MDHS14/3 General methods for sampling and gravimetric analysis of respirable and inhalable dust  
MDHS70 General methods for sampling airborne gases and vapours

## Derived No Effect Level (DNEL) / Derived Minimum Effect Level (DMEL)

No information available

## Predicted No Effect Concentration (PNEC)

No information available.

## 8.2. Exposure controls

### Engineering Measures

Ensure that eyewash stations and safety showers are close to the workstation location. Use explosion-proof electrical/ventilating/lighting/equipment. Use only under a chemical fume hood.  
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
Nitrile rubber Neoprene Natural rubber PVC	See manufacturers recommendations	-	EN 374	(minimum requirement)

#### Skin and body protection

Long sleeved clothing.

Inspect gloves before use. observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. (Refer to manufacturer/supplier for information) 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. gloves with care avoiding skin contamination.

#### 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:** Particulates filter conforming to EN 143

#### 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:-** Particle filtering: EN149:2001  
When RPE is used a face piece Fit Test should be conducted

#### Environmental exposure controls

Prevent product from entering drains. Do not allow material to contaminate ground water system.

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

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## 9.1. Information on basic physical and chemical properties

Physical State	Solid	
Appearance	Yellow	
Odor	sweet	
Odor Threshold	No data available	
Melting Point/Range	81 - 84 °C / 177.8 - 183.2 °F	
Softening Point	No data available	
Boiling Point/Range	242 °C / 467.6 °F	@ 760 mmHg
Flammability (liquid)	Not applicable	Solid
Flammability (solid,gas)	No information available	
Explosion Limits	No data available	
Flash Point	127 °C / 260.6 °F	Method - No information available
Autoignition Temperature	510 °C / 950 °F	
Decomposition Temperature	No data available	
pH	No information available	
Viscosity	Not applicable	Solid
Water Solubility	Insoluble	
Solubility in other solvents	No information available	
Partition Coefficient (n-octanol/water)		
Component	log Pow	
Benzene, 1-chloro-4-nitro-	2.6	
Vapor Pressure	No data available	
Density / Specific Gravity	1.298	
Bulk Density	No data available	
Vapor Density	Not applicable	Solid
Particle characteristics	No data available	

## 9.2. Other information

Molecular Formula	C6 H4 Cl N O2
Molecular Weight	157.56
Evaporation Rate	Not applicable - Solid

## SECTION 10: STABILITY AND REACTIVITY

### 10.1. Reactivity

None known, based on information available

### 10.2. Chemical stability

Stable under normal conditions.

### 10.3. Possibility of hazardous reactions

Hazardous Polymerization	Hazardous polymerization does not occur.
Hazardous Reactions	None under normal processing.

### 10.4. Conditions to avoid

Incompatible products. Combustible material.

### 10.5. Incompatible materials

Strong bases. Reducing Agent.

### 10.6. Hazardous decomposition products

Nitrogen oxides (NOx). Carbon monoxide (CO). Carbon dioxide (CO<sub>2</sub>). Chlorine. Phosgene. Hydrogen chloride gas.

## SECTION 11: TOXICOLOGICAL INFORMATION

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## 11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

### Product Information

#### (a) acute toxicity;

Oral Category 3  
Dermal Category 3  
Inhalation Category 3

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Benzene, 1-chloro-4-nitro-	LD50 = 294 mg/kg ( Rat )	LD50 = 750 mg/kg ( Rabbit )	LC50 > 16.1 mg/L ( Rat ) 4 h

(b) skin corrosion/irritation; No data available

(c) serious eye damage/irritation; No data available

#### (d) respiratory or skin sensitization;

Respiratory No data available  
Skin No data available

#### (e) germ cell mutagenicity;

Category 2

Substances which cause concern for man owing to possible mutagenic effects but for which the available information is not adequate for making a satisfactory assessment

#### (f) carcinogenicity;

Category 2

The table below indicates whether each agency has listed any ingredient as a carcinogen

Component	EU	UK	Germany	IARC
Benzene, 1-chloro-4-nitro-				Group 2B

(g) reproductive toxicity; No data available

(h) STOT-single exposure; No data available

#### (i) STOT-repeated exposure;

Category 2

##### Target Organs

Blood.

#### (j) aspiration hazard;

Not applicable  
Solid

Symptoms / effects, both acute and delayed No information available.

## 11.2. Information on other hazards

### Endocrine Disrupting Properties

Assess endocrine disrupting properties for human health. This product does not contain any known or suspected endocrine disruptors.

## SECTION 12: ECOLOGICAL INFORMATION

### 12.1. Toxicity



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## Ecotoxicity effects

The product contains following substances which are hazardous for the environment. Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Component	Freshwater Fish	Water Flea	Freshwater Algae
Benzene, 1-chloro-4-nitro-	LC50: = 14.36 mg/L, 96h (Brachydanio rerio)	EC50: = 2.7 mg/L, 48h (Daphnia magna)	

Component	Microtox	M-Factor
Benzene, 1-chloro-4-nitro-	EC50 = 24 mg/L 5 min EC50 = 26 mg/L 15 min	

## 12.2. Persistence and degradability

### Persistence

May persist, based on information available.

### Degradation in sewage treatment plant

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

## 12.3. Bioaccumulative potential

May have some potential to bioaccumulate

Component	log Pow	Bioconcentration factor (BCF)
Benzene, 1-chloro-4-nitro-	2.6	5.8 - 20.9 dimensionless

## 12.4. Mobility in soil

Spillage unlikely to penetrate soil The product is insoluble and sinks in water The product evaporates slowly . Is not likely mobile in the environment due its low water solubility. Spillage unlikely to penetrate soil

## 12.5. Results of PBT and vPvB assessment

No data available for assessment.

## 12.6. Endocrine disrupting properties

### Endocrine Disruptor Information

This product does not contain any known or suspected endocrine disruptors

## 12.7. Other adverse effects

### Persistent Organic Pollutant Ozone Depletion Potential

This product does not contain any known or suspected substance  
This product does not contain any known or suspected substance

## SECTION 13: DISPOSAL CONSIDERATIONS

### 13.1. Waste treatment methods

#### 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.

#### European Waste Catalogue (EWC)

According to the European Waste Catalog, Waste Codes are not product specific, but application specific.

#### 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. Do not let this chemical enter the environment.

#### Switzerland - Waste Ordinance

Disposal should be in accordance with applicable regional, national and local laws and regulations. Ordinance on the Avoidance and the Disposal of Waste (Waste Ordinance, ADWO) SR 814.600  
<https://www.fedlex.admin.ch/eli/cc/2015/891/en>

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## SECTION 14: TRANSPORT INFORMATION

### IMDG/IMO

**14.1. UN number** UN1578  
**14.2. UN proper shipping name** CHLORONITROBENZENES, SOLID  
**14.3. Transport hazard class(es)** 6.1  
**14.4. Packing group** II

### ADR

**14.1. UN number** UN1578  
**14.2. UN proper shipping name** CHLORONITROBENZENES, SOLID  
**14.3. Transport hazard class(es)** 6.1  
**14.4. Packing group** II

### IATA

**14.1. UN number** UN1578  
**14.2. UN proper shipping name** CHLORONITROBENZENES, SOLID  
**14.3. Transport hazard class(es)** 6.1  
**14.4. Packing group** II

**14.5. Environmental hazards** Dangerous for the environment  
Product is a marine pollutant according to the criteria set by IMDG/IMO

**14.6. Special precautions for user** No special precautions required.

**14.7. Maritime transport in bulk according to IMO instruments** Not applicable, packaged goods

## SECTION 15: REGULATORY INFORMATION

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

#### International Inventories

Europe (EINECS/ELINCS/NLP), China (IECSC), Taiwan (TCSI), Korea (KECL), Japan (ENCS), Japan (ISHL), Canada (DSL/NDSL), Australia (AICS), New Zealand (NZIoC), Philippines (PICCS). US EPA (TSCA) - Toxic Substances Control Act, (40 CFR Part 710)

Component	CAS No	EINECS	ELINCS	NLP	IECSC	TCSI	KECL	ENCS	ISHL
Benzene, 1-chloro-4-nitro-	100-00-5	202-809-6	-	-	X	X	KE-05780	X	X

Component	CAS No	TSCA	TSCA Inventory notification - Active-Inactive	DSL	NDSL	AICS	NZIoC	PICCS
Benzene, 1-chloro-4-nitro-	100-00-5	X	ACTIVE	X	-	X	X	X

**Legend:** X - Listed '-' - Not Listed

**KECL** - NIER number or KE number (<http://ncis.nier.go.kr/en/main.do>)

### Authorisation/Restrictions according to EU REACH

Component	CAS No	REACH (1907/2006) - Annex XIV - Substances Subject to Authorization	REACH (1907/2006) - Annex XVII - Restrictions on Certain Dangerous Substances	REACH Regulation (EC 1907/2006) article 59 - Candidate List of Substances of Very High Concern (SVHC)
Benzene, 1-chloro-4-nitro-	100-00-5	-	Use restricted. See item 75. (see link for restriction details)	-

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## REACH links

<https://echa.europa.eu/substances-restricted-under-reach>

## Seveso III Directive (2012/18/EC)

Component	CAS No	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements
Benzene, 1-chloro-4-nitro-	100-00-5	Not applicable	Not applicable

## Regulation (EC) No 649/2012 of the European Parliament and of the Council of 4 July 2012 concerning the export and import of dangerous chemicals

Not applicable

## Contains component(s) that meet a 'definition' of per & poly fluoroalkyl substance (PFAS)?

Not applicable

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work .

## National Regulations

**UK** - Take note of Control of Substances Hazardous to Health Regulations (COSHH) 2002 and 2005 Amendment

## WGK Classification

See table for values

Component	Germany - Water Classification (AwSV)	Germany - TA-Luft Class
Benzene, 1-chloro-4-nitro-	WGK3	Class I : 20 mg/m <sup>3</sup> (Massenkonzentration)

Component	France - INRS (Tables of occupational diseases)
Benzene, 1-chloro-4-nitro-	Tableaux des maladies professionnelles (TMP) - RG 13

## Swiss Regulations

Article 4 para. 4 of the Ordinance on the protection of young people in the workplace (SR 822.115) and Article 1 lit. f of the EAER regulation on hazardous work and young people (SR 822.115.2).

Take note on Article 13 Maternity Ordinance (SR 822.111.52) with regards expectant and nursing mothers.

## 15.2. Chemical safety assessment

A Chemical Safety Assessment/Report (CSA/CSR) has not been conducted

## SECTION 16: OTHER INFORMATION

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

H301 - Toxic if swallowed

H311 - Toxic in contact with skin

H331 - Toxic if inhaled

H341 - Suspected of causing genetic defects

H351 - Suspected of causing cancer

H373 - May cause damage to organs through prolonged or repeated exposure

H411 - Toxic to aquatic life with long lasting effects

### Legend

**CAS** - Chemical Abstracts Service

**EINECS/ELINCS** - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances

**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory

**DSL/NDSL** - Canadian Domestic Substances List/Non-Domestic Substances List

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**PICCS** - Philippines Inventory of Chemicals and Chemical Substances  
**IECSC** - Chinese Inventory of Existing Chemical Substances  
**KECL** - Korean Existing and Evaluated Chemical Substances

**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  
Predicted No Effect Concentration (PNEC)  
**LD50** - Lethal Dose 50%  
**EC50** - Effective Concentration 50%  
**POW** - Partition coefficient Octanol:Water  
**vPvB** - very Persistent, very Bioaccumulative

**ADR** - European Agreement Concerning the International Carriage of Dangerous Goods by Road  
**IMO/IMDG** - International Maritime Organization/International Maritime Dangerous Goods Code  
**OECD** - Organisation for Economic Co-operation and Development  
**BCF** - Bioconcentration factor

**ICAO/IATA** - International Civil Aviation Organization/International Air Transport Association  
**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

## 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.

<b>Prepared By</b>	Health, Safety and Environmental Department
<b>Revision Date</b>	12-Feb-2024
<b>Revision Summary</b>	New emergency telephone response service provider.

**This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006. COMMISSION REGULATION (EU) 2020/878 amending Annex II to Regulation (EC) No 1907/2006 .**

**For Switzerland - Compiled in accordance with the technical provisions referred to in Annex 2, Number 3, ChemO (SR 813.11 - Ordinance on Protection against Dangerous Substances and Preparations).**

## 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**