

according to Regulation UK SI 2019/758 and UK SI 2020/1577 as amended

Creation Date 26-Sep-2009

Revision Date 20-Oct-2023

Revision Number 11

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

#### 1.1. Product identifier

Product Description: Cat No. : Synonyms Index No CAS No EC No Molecular Formula	<u>4-Nitroaniline</u> N/2600/48 p-Nitrophenylamine; p-Nitroaniline; 1-Amino-4-nitrobenzene; 4-Nitrobenzenamine 612-012-00-9 100-01-6 202-810-1 C6 H6 N2 O2
1.2. Relevant identified uses of the	e substance or mixture and uses advised against
Recommended Use Uses advised against	Laboratory chemicals. No Information available
1.3. Details of the supplier of the s	afety data sheet_
Company	UK entity/business name   Fisher Scientific UK   Bishop Meadow Road, Loughborough,   Leicestershire LE11 5RG, United Kingdom   EU entity/business name   Thermo Fisher Scientific   Janssen Pharmaceuticalaan 3a   2440 Geel, Belgium
E-mail address	begel.sdsdesk@thermofisher.com
1.4. Emergency telephone number	Tel: 01509 231166 Chemtrec US: (800) 424-9300 Chemtrec EU: 001-703-527-3887

### **SECTION 2: HAZARDS IDENTIFICATION**

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

#### CLP Classification - According to GB-CLP Regulations UK SI 2019/720 and UK SI 2020/1567

#### Physical hazards

Based on available data, the classification criteria are not met

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#### Health hazards

Acute oral toxicity Acute dermal toxicity Acute Inhalation Toxicity - Dusts and Mists Specific target organ toxicity - (repeated exposure)

#### **Environmental hazards**

Chronic aquatic toxicity

Category 3 (H301) Category 3 (H311) Category 3 (H331) Category 2 (H373)

Category 3 (H412)

Full text of Hazard Statements: see section 16

2.2. Label elements



Signal Word

Danger

#### **Hazard Statements**

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

- H412 Harmful to aquatic life with long lasting effects
- H301 + H311 + H331 Toxic if swallowed, in contact with skin or if inhaled

#### **Precautionary Statements**

P280 - Wear protective gloves/protective clothing/eye protection/face protection

- P302 + P350 IF ON SKIN: Gently 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
- P310 Immediately call a POISON CENTER or doctor/physician
- P260 Do not breathe dust/fume/gas/mist/vapors/spray
- P273 Avoid release to the environment

#### 2.3. Other hazards

Substance is not considered persistent, bioaccumulative and toxic (PBT) / very persistent and very bioaccumulative (vPvB)

Toxic to terrestrial vertebrates

This product does not contain any known or suspected endocrine disruptors

### **SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS**

#### 3.1. Substances

Component	CAS No	EC No	Weight %	CLP Classification - According to GB-CLP Regulations UK SI 2019/720 and UK SI 2020/1567
p-Nitroaniline	100-01-6	EEC No. 202-810-1	99	Acute Tox. 3 (H301) Acute Tox. 3 (H311) Acute Tox. 3 (H331) STOT RE 2 (H373)



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Aquatic Chronic 3 (H412)

Full text of Hazard Statements: see section 16

### **SECTION 4: FIRST AID MEASURES**

4.1. Description of first aid measures
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General Advice	Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.		
Eye Contact	In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.		
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 breathing is difficult, give oxygen. 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.

### **SECTION 5: FIREFIGHTING MEASURES**

#### 5.1. Extinguishing media

#### Suitable Extinguishing Media

Water spray, carbon dioxide (CO2), 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

Vapors may form explosive mixtures with air.

#### **Hazardous Combustion Products**

Nitrogen oxides (NOx), Carbon monoxide (CO), Carbon dioxide (CO<sub>2</sub>).

#### 5.3. Advice for firefighters

#### 4-Nitroaniline

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

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

#### 6.2. Environmental precautions

Should not be released into the environment. 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

Do not get in eyes, on skin, or on clothing. Wear personal protective equipment/face protection. Avoid dust formation. 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) 510Class 6.1CStorage Class (LGK) (Germany)Class 6.1C

7.3. Specific end use(s)

Use in laboratories

#### **SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**

#### 8.1. Control parameters

#### Exposure limits

List source(s): **IRE -** 2021 Code of Practice for the Chemical Agents Regulations, Schedule 1. Published by the Health and Safety Authority

#### 4-Nitroaniline

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Component	The United Kingdom	European Union	Ireland
p-Nitroaniline			TWA: 3 mg/m <sup>3</sup> 8 hr.
			STEL: 12 mg/m <sup>3</sup> 15 min
			Skin

#### **Biological limit values**

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

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

See table for values

Component	Acute effects local (Dermal)	Acute effects systemic (Dermal)	Chronic effects local (Dermal)	Chronic effects systemic (Dermal)
p-Nitroaniline				DNEL =
100-01-6 (99)				0.17631579mg/kg
				bw/day

Component	Acute effects local (Inhalation)	Acute effects systemic (Inhalation)	Chronic effects local (Inhalation)	Chronic effects systemic (Inhalation)
p-Nitroaniline 100-01-6(99)				DNEL = 0.201mg/m <sup>3</sup>

#### Predicted No Effect Concentration (PNEC)

See values below.

Component	Fresh water	Fresh water	Water Intermittent	Microorganisms in	Soil (Agriculture)
		sediment		sewage treatment	
p-Nitroaniline 100-01-6 ( 99 )	PNEC = 0.024mg/L	64.247424mg/kg	PNEC = 0.24mg/L	PNEC = 1mg/L	PNEC = 25.961088mg/kg
		sediment dw			soil dw

Component	Marine water	Marine water sediment	Marine water intermittent	Food chain	Air
p-Nitroaniline	PNEC =	PNEC =			
100-01-6 ( 99 )	0.0024mg/L	64.247424mg/kg			
		sediment dw			

#### 8.2. Exposure controls

#### Engineering Measures

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	I - EN 166)		
Hand Protection	Protectiv	ve gloves			
Glove material Natural rubber Nitrile rubber Neoprene PVC	Breakthrough time See manufacturers recommendations	Glove thickness -	EU standard EN 374	Glove comments (minimum requirement)	

#### 4-Nitroaniline

#### Skin and body protection Long sleeved clothing.

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.

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 <b>Recommended Filter type:</b> 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. <b>Recommended half mask:-</b> Valve filtering: EN405; or; Half mask: EN140; plus filter, EN 141 When RPE is used a face piece Fit Test should be conducted
Environmental exposure controls	Prevent product from entering drains.

### **SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**

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

Physical State	Solid	
Appearance Odor Odor Threshold Melting Point/Range Softening Point Boiling Point/Range Flammability (liquid) Flammability (solid,gas) Explosion Limits	Dark yellow Ammonia-like No data available 146 - 151 °C / 294.8 - 303.8 °F No data available 332 °C / 629.6 °F Not applicable No information available No data available	@ 760 mmHg Solid
Flash Point Autoignition Temperature Decomposition Temperature	199 °C / 390.2 °F 510 °C / 950 °F 280 °C	Method - No information available
pH	~ .7	sat.sol
Viscosity Water Solubility Solubility in other solvents	Not applicable 0.8 g/L (20°C) No information available	Solid
Partition Coefficient (n-octanol/wat	er)	
Component p-Nitroaniline Vapor Pressure Density / Specific Gravity Bulk Density Vapor Density	log Pow 1.2 1 mmHg @ 142 °C No data available No data available Not applicable	Solid
Particle characteristics	No data available	Cond

9.2. Other information

Molecular Formula Molecular Weight Evaporation Rate C6 H6 N2 O2 138.13 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 Reactions	Hazardous polymerization does not occur. None under normal processing.		
10.4. Conditions to avoid	Avoid dust formation. Incompatible products. Exposure to moisture.		
10.5. Incompatible materials	Bases. Strong oxidizing agents. Strong acids. Strong reducing agents.		

#### 10.6. Hazardous decomposition products

Nitrogen oxides (NOx). Carbon monoxide (CO). Carbon dioxide (CO<sub>2</sub>).

**SECTION 11: TOXICOLOGICAL INFORMATION** 

#### 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
p-Nitroaniline	LD50 = 750 mg/kg (Rat)	LD50 > 7940 mg/kg (Rat)	-

(b) skin corrosion/irritation;	No data available
(c) serious eye damage/irritation;	No data available
(d) respiratory or skin sensitization; Respiratory Skin	No data available No data available
(e) germ cell mutagenicity;	No data available
(f) carcinogenicity;	No data available

#### **4-Nitroaniline**

### SAFETY DATA SHEET

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

(g) reproductive toxicity;	No data available
(h) STOT-single exposure;	No data available
(i) STOT-repeated exposure; Target Organs	Category 2 Blood, Hematopoietic System.
(j) aspiration hazard;	Not applicable Solid
Symptoms / effects,both acute and delayed	No information available.

#### 11.2. Information on other hazards

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 **Ecotoxicity effects**

Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment. Contains a substance which is:. Harmful to aquatic organisms. Do not flush into surface water or sanitary sewer system. Do not empty into drains.

Component	Freshwater Fish	Water Flea	Freshwater Algae
p-Nitroaniline	LC50: = 87.6 mg/L, 96h static (Brachydanio rerio) LC50: 85.7 - 117 mg/L, 96h static (Pimephales promelas) LC50: 110 - 142 mg/L, 96h flow-through (Pimephales promelas)	EC50: = 17 mg/L, 48h (Daphnia magna)	

Component	Microtox	M-Factor
p-Nitroaniline	EC50 = 1.02 mg/L 30 min	

**12.2. Persistence and degradability** Not readily biodegradable

Soluble in water, Persistence is unlikely, based on information available. Degradation in sewage Contains substances known to be hazardous to the environment or not degradable in waste water treatment plants.

#### 12.3. Bioaccumulative potential Bioaccumulation is unlikely

Component	log Pow	Bioconcentration factor (BCF)
p-Nitroaniline	1.2	2.9 - 3.6 dimensionless

#### 12.4. Mobility in soil

Persistence

treatment plant

The product is water soluble, and may spread in water systems . Will likely be mobile in the

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	environment due to its water solubility. Highly mobile in soils
12.5. Results of PBT and vPvB assessment	Substance is not considered persistent, bioaccumulative and toxic (PBT) / very persistent and very bioaccumulative (vPvB).
<u>12.6. Endocrine disrupting</u> 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
SE	ECTION 13: DISPOSAL CONSIDERATIONS
13.1. Waste treatment methods	
Waste from Residues/Unused	Waste is classified as hazardous. Dispose of in accordance with the European Directives

application specific.

chemical enter the environment.

on waste and hazardous waste. Dispose of in accordance with local regulations.

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

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

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

### **SECTION 14: TRANSPORT INFORMATION**

#### IMDG/IMO

Products

**Contaminated Packaging** 

**Other Information** 

European Waste Catalogue (EWC)

**4-Nitroaniline** 

<u>14.1. UN number</u>	UN1661
<u>14.2. UN proper shipping name</u>	NITROANILINES
<u>14.3. Transport hazard class(es)</u>	6.1
<u>14.4. Packing group</u>	II
ADR 14.1. UN number 14.2. UN proper shipping name 14.3. Transport hazard class(es) 14.4. Packing group	UN1661 NITROANILINES 6.1 II
IATA	
<u>14.1. UN number</u>	UN1661
<u>14.2. UN proper shipping name</u>	NITROANILINES
<u>14.3. Transport hazard class(es)</u>	6.1
<u>14.4. Packing group</u>	II

4-Nitroaniline

14.5. Environmental hazards No hazards identified

14.6. Special precautions for user No special precautions required.

14.7. Maritime transport in bulk Not applicable, packaged goods

#### according to IMO instruments

#### **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
p-Nitroaniline	100-01-6	202-810-1	-	-	Х	Х	KE-25964	Х	Х
Component	CAS No	TSCA	TSCA Inventory notification - Active-Inactive		DSL	NDSL	AICS	NZIoC	PICCS
p-Nitroaniline	100-01-6	Х	Active-Inactive ACTIVE		Х	-	Х	Х	Х

Legend: X - Listed '-' - Not Listed

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

Not applicable

#### Authorisation/Restrictions according to EU REACH

REACH (1907/2006) -REACH (1907/2006) -**REACH Regulation (EC** CAS No Component Annex XIV - Substances Annex XVII - Restrictions 1907/2006) article 59 · Subject to Authorization on Certain Dangerous Candidate List of Substances Substances of Very High Concern (SVHC) p-Nitroaniline 100-01-6

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

Component	CAS No	Seveso III Directive (2012/18/EC) - Seveso III Directive (2012/18/EC) -	
	Qualifying Quantities for Major Accident		Qualifying Quantities for Safety Report
		Notification	Requirements
p-Nitroaniline	100-01-6	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

#### **4-Nitroaniline**

Component	Germany - Water Classification (AwSV)	Germany - TA-Luft Class
p-Nitroaniline	WGK3	Class I : 20 mg/m <sup>3</sup> (Massenkonzentration)

Component	France - INRS (Tables of occupational diseases)
p-Nitroaniline	Tableaux des maladies professionnelles (TMP) - RG 15,RG 15bis

#### 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

H412 - Harmful to aquatic life with long lasting effects

H331 - Toxic if inhaled

#### Legend

**CAS** - Chemical Abstracts Service TSCA - United States Toxic Substances Control Act Section 8(b) Inventory EINECS/ELINCS - European Inventory of Existing Commercial Chemical DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances/EU List of Notified Chemical Substances Substances List ENCS - Japanese Existing and New Chemical Substances PICCS - Philippines Inventory of Chemicals and Chemical Substances **IECSC** - Chinese Inventory of Existing Chemical Substances AICS - Australian Inventory of Chemical Substances KECL - Korean Existing and Evaluated Chemical Substances NZIOC - New Zealand Inventory of Chemicals WEL - Workplace Exposure Limit TWA - Time Weighted Average ACGIH - American Conference of Governmental Industrial Hygienists IARC - International Agency for Research on Cancer Predicted No Effect Concentration (PNEC) **DNEL** - Derived No Effect Level **RPE** - Respiratory Protective Equipment LD50 - Lethal Dose 50% LC50 - Lethal Concentration 50% EC50 - Effective Concentration 50% NOEC - No Observed Effect Concentration POW - Partition coefficient Octanol:Water PBT - Persistent, Bioaccumulative, Toxic vPvB - very Persistent, very Bioaccumulative ADR - European Agreement Concerning the International Carriage of ICAO/IATA - International Civil Aviation Organization/International Air Dangerous Goods by Road Transport Association IMO/IMDG - International Maritime Organization/International Maritime MARPOL - International Convention for the Prevention of Pollution from Dangerous Goods Code Ships **OECD** - Organisation for Economic Co-operation and Development ATE - Acute Toxicity Estimate BCF - Bioconcentration factor VOC - (Volatile Organic Compound) Key literature references and sources for data

### 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.

Suppliers safety data sheet, Chemadvisor - LOLI, Merck index, RTECS

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https://echa.europa.eu/information-on-chemicals

**Revision Summary** 

Not applicable.

# This safety data sheet complies with Regulation UK SI 2019/758 and UK SI 2020/1577 as amended.

. 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**