ThermoFisher SCIENTIFIC

SAFETY DATA

according to Regulation UK SI 2019/758 and UK SI 2020

Creation Date 13-Sep-2010 **Revision Date** 25-Sep-2023

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND THECOMPANY/UNDERTAKING

1.1. Product identifier

Product Description:	**3-Methyl-1-butanol**
Cat No. :	**126480000; 126480010; 126480025; 126480250; 126485000**
Synonyms	Isoamyl alcohol; Isopentyl alcohol
CAS No	123-51-3
EC No	204-633-5
Molecular Formula	C5 H12 O

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

Recommended Use	Laboratory chemicals
Sector of use	SU3 - Industrial uses: Uses of substances as such or in preparations a
Product category	PC21 - Laboratory chemicals
Process categories	PROC15 - Use as a laboratory reagent
Environmental release category	ERC6a - Industrial use resulting in manufacture of another substance (
Uses advised against	No Information available

1.3. Details of the supplier of the safety 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

For information **US** call: 001-800-227-6701 / **Europe** call: +32 14 57 52
Emergency Number **US:**001-201-796-7100 / **Europe:** +32 14 57 52 99
CHEMTREC Tel. No. **US:**001-800-424-9300 / **Europe:**001-703-527-38

SECTION 2: HAZARDS IDENTIFICATION

Health hazards

Acute Inhalation Toxicity - Vapors	Category 4 (H332
Skin Corrosion/Irritation	Category 2 (H315
Serious Eye Damage/Eye Irritation	Category 1 (H318
Specific target organ toxicity - (single exposure)	Category 3 (H335

Environmental hazards

Chronic aquatic toxicity	Category 3 (H412

Full text of Hazard Statements: see section 16

2.2. Label elements

Signal Word **Danger**

Hazard Statements

H226 - Flammable liquid and vapor
H332 - Harmful if inhaled
H315 - Causes skin irritation
H318 - Causes serious eye damage
H335 - May cause respiratory irritation
H412 - Harmful to aquatic life with long lasting effects
EUH066 - Repeated exposure may cause skin dryness or cracking

Precautionary Statements

P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking
P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin wi
P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lense
easy to do. Continue rinsing
P310 - Immediately call a POISON CENTER or doctor/physician
P280 - Wear protective gloves/protective clothing/eye protection/face protection

2.3. Other hazards

3.1. Substances

Component	CAS No	EC No	Weight %	GHS Classifica GB-CLP Regulatio UK SI
Isoamyl alcohol	123-51-3	EEC No. 204-633-5	<=100	Flam Li Acute T Skin Irr Eye Irr STOT S Aquatic Ch (EU

Full text of Hazard Statements: see section 16

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures

General Advice If symptoms persist, call a physician.

Eye Contact Rinse immediately with plenty of water, also under the eyelids, for at le medical attention.

Skin Contact Wash off immediately with plenty of water for at least 15 minutes. If ski call a physician.

Ingestion Clean mouth with water and drink afterwards plenty of water.

Inhalation Remove to fresh air. If not breathing, give artificial respiration. Get med symptoms occur.

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

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

None reasonably foreseeable. Causes severe eye damage. Symptom may be headache, dizziness, tiredness, nausea and vomiting

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

Notes to Physician Treat symptomatically. Symptoms may be delayed.

SECTION 5: FIREFIGHTING MEASURES

5.1. Extinguishing media

Flammable. Risk of ignition. Vapors may form explosive mixtures with air. Vapors may travel to source of igniti
Containers may explode when heated. Thermal decomposition can lead to release of irritating gases and vapo

Hazardous Combustion Products
Carbon monoxide (CO), Carbon dioxide (CO_2).

5.3. Advice for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equival
protective gear.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment as required. Ensure adequate ventilation. Remove all sources of ignition. T
measures against static discharges.

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

Soak up with inert absorbent material. Keep in suitable, closed containers for disposal. Remove all sources of
spark-proof tools and explosion-proof equipment.

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. Do not get in eyes, on skin, or on clothing. Ensure adequ
ingestion and inhalation. Keep away from open flames, hot surfaces and sources of ignition. Use only non-spa
precautionary measures against static discharges.

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

7.2. Conditions for safe storage, including any incompatibilities

Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat, sparks and flame

Technical Rules for Hazardous Substances (TRGS) 510 Storage Class (LGK) (Germany) Class 3

8.1. Control parameters

Exposure limits
List source(s): **UK** - EH40/2005 Work Exposure Limits, Fourth edition. Published 2020. **IRE -** 2021 Code of Pr
Chemical Agents Regulations, Schedule 1. Published by the Health and Safety Authority

Component	The United Kingdom	European Union	
Isoamyl alcohol	STEL: 125 ppm 15 min STEL: 458 mg/m³ 15 min TWA: 100 ppm 8 hr TWA: 366 mg/m³ 8 hr		T ST S

Biological limit values
This product, as supplied, does not contain any hazardous materials with biological limits established by the re
regulatory bodies

Derived No Effect Level (DNEL) / Derived Minimum Effect Level (DMEL)
See table for values

Component	Acute effects local (Inhalation)	Acute effects systemic (Inhalation)	Chronic effects local (Inhalation)	sy
Isoamyl alcohol 123-51-3 (<=100)	DNEL = 292mg/m³		DNEL = 73.16mg/m³	

Predicted No Effect Concentration (PNEC)
See values below.

Component	Fresh water	Fresh water sediment	Water Intermittent	Microorganisms in sewage treatment
Isoamyl alcohol 123-51-3 (<=100)	PNEC = 0.12mg/L	PNEC = 0.496mg/kg sediment dw	PNEC = 1.2mg/L	PNEC = 37mg/L

Component	Marine water	Marine water sediment	Marine water intermittent	Food chain
Isoamyl alcohol 123-51-3 (<=100)	PNEC = 0.012mg/L	PNEC = 0.0496mg/kg sediment dw		

8.2. Exposure controls

Engineering Measures
Use only under a chemical fume hood. Use explosion-proof electrical/ventilating/lighting equipment. Ensure th
and safety showers are close to the workstation location. Ensure adequate ventilation, especially in confined a
Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introd
equipment changes to minimise release or contact, and the use of properly designed ventilation systems, shou

Glove material	Breakthrough time	Glove thickness	EU standard	Glove co
Nitrile rubber Viton (R)	See manufacturers recommendations	-	EN 374	(minimum re

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 supp
(Refer to manufacturer/supplier for information)
Ensure gloves are suitable for the task: Chemical compatability, Dexterity, Operational conditions, User susce
sensitisation effects, also take into consideration the specific local conditions under which the product is used,
of cuts, abrasion.
Remove gloves with care avoiding skin contamination.

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

Large scale/emergency use Use a NIOSH/MSHA or European Standard EN 136 approved respirat
are exceeded or if irritation or other symptoms are experienced
Recommended Filter type: Organic gases and vapours filter Type A
EN14387

Small scale/Laboratory use Use a NIOSH/MSHA or European Standard EN 149:2001 approved re
limits are exceeded or if irritation or other symptoms are experienced.
Recommended half mask:- Valve filtering: EN405; or; Half mask: 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	Liquid	
Appearance	Clear	
Odor	Characteristic	
Odor Threshold	No data available	
Melting Point/Range	-117 °C / -178.6 °F	
Softening Point	No data available	
Boiling Point/Range	130 - 132 °C / 266 - 269.6 °F	760 mm HG
Flammability (liquid)	Flammable	On basis of test data
Flammability (solid,gas)	Not applicable	Liquid
Explosion Limits	**Lower** 1.0 Vol% **Upper** 8 Vol%	
Flash Point	45 °C / 113 °F	**Method -** No information avail
Autoignition Temperature	365 - °C / 689 - °F	
Decomposition Temperature	335 °C	
pH	6.5	25 g/l aq.sol
Viscosity	4.3 mPa s at 20 °C	

Vapor Density	3.04 (Air = 1.0)	(Air = 1.0)
Particle characteristics	Not applicable (liquid)	

9.2. Other information

Molecular Formula	C5 H12 O
Molecular Weight	88.15
Explosive Properties	explosive air/vapour mixtures possible

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. Excess heat. Keep away from open flames, ho
sources of ignition.

10.5. Incompatible materials

Strong oxidizing agents. Metals. Alkali metals. Halogens. Acids. Acid a
chlorides. Isocyanates.

10.6. Hazardous decomposition products

Carbon monoxide (CO). Carbon dioxide (CO_2).

SECTION 11: TOXICOLOGICAL INFORMATION

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

Product Information

(a) acute toxicity;

Oral	Based on available data, the classification criteria are not met
Dermal	Based on available data, the classification criteria are not met
Inhalation	Category 4

Component	LD50 Oral	LD50 Dermal	LC
Isoamyl alcohol	LD50 = 5770 mg/kg (Rat)	LD50 = 3250 mg/kg (Rabbit)	LC50 > 2

Skin	Based on available data, the classification criteria are not met
(e) germ cell mutagenicity;	Based on available data, the classification criteria are not met
(f) carcinogenicity;	Based on available data, the classification criteria are not met There are no known carcinogenic chemicals in this product.
(g) reproductive toxicity;	Based on available data, the classification criteria are not met
(h) STOT-single exposure;	Category 3
Results / Target organs	Respiratory system.
(i) STOT-repeated exposure;	Based on available data, the classification criteria are not met
Target Organs	None known.
(j) aspiration hazard;	Based on available data, the classification criteria are not met
Symptoms / effects,both acute and delayed	Symptoms of overexposure may be headache, dizziness, tiredness, na

11.2. Information on other hazards

Endocrine Disrupting Properties	Assess endocrine disrupting properties for human health. This product known or suspected endocrine disruptors.

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Ecotoxicity effects This product contains the following substance(s) which are hazardous Harmful to aquatic organisms, may cause long-term adverse effects in environment. The product contains following substances which are haz environment.

Component	Freshwater Fish	Water Flea	Fre
Isoamyl alcohol	LC50 96 h 700 mg/L (rainbow trout)	EC50: = 260 mg/L, 48h (Daphnia magna)	EC50 (Desmod EC50 (Desmod

Component	Microtox	M-Fac
Isoamyl alcohol	EC50 = 2500 mg/L 17 h	

Isoamyl alcohol	1.35	No data av

12.4. Mobility in soil

The product is water soluble, and may spread in water systems . Will
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 (PB
and very bioaccumulative (vPvB).

12.6. Endocrine disrupting properties

Endocrine Disruptor Information

This product does not contain any known or suspected endocrine disru

12.7. Other adverse effects

Persistent Organic Pollutant

This product does not contain any known or suspected substance

Ozone Depletion Potential

This product does not contain any known or suspected substance

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Waste from Residues/Unused Products

Waste is classified as hazardous. Dispose of in accordance with the E
on waste and hazardous waste. Dispose of in accordance with local re

Contaminated Packaging

Dispose of this container to hazardous or special waste collection poin
retain product residue, (liquid and/or vapor), and can be dangerous. Ke
empty container away from heat and sources of ignition.

European Waste Catalogue (EWC)

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

Other Information

Waste codes should be assigned by the user based on the application
was used. Do not flush to sewer. Can be landfilled or incinerated, wher
local regulations. Do not empty into drains. Do not let this chemical ent

SECTION 14: TRANSPORT INFORMATION

IMDG/IMO

14.1. UN number UN1105
14.2. UN proper shipping name PENTANOLS
14.3. Transport hazard class(es) 3
14.4. Packing group III

ADR

14.1. UN number	UN1105
14.2. UN proper shipping name	PENTANOLS
14.3. Transport hazard class(es)	3
14.4. Packing group	III
14.5. Environmental hazards	No hazards identified
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 (DS (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
Isoamyl alcohol	123-51-3	204-633-5	-	-	X	X	KE-23575

Component	CAS No	TSCA	TSCA Inventory notification - Active-Inactive	DSL	NDSL	AICS
Isoamyl alcohol	123-51-3	X	ACTIVE	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 Not applicable

Component	CAS No	REACH (1907/2006) - Annex XIV - Substances Subject to Authorization	REACH (1907/2006) - Annex XVII - Restrictions on Certain Dangerous Substances	RI 1 Su
Isoamyl alcohol	123-51-3	-	-	

Seveso III Directive (2012/18/EC)

Component	CAS No	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification	Seveso III Direc Qualifying Quanti Requ
Isoamyl alcohol	123-51-3	Not applicable	Not a

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

Component	CAS No	OECD HPV	Restriction of Hazardous Substances (RoHS)	
Isoamyl alcohol	123-51-3	Listed	Not applicable	

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

National Regulations

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

WGK Classification See table for values

Component	Germany - Water Classification (AwSV)	Germany - TA-Luft
Isoamyl alcohol	WGK1	

Component	France - INRS (Tables of occupational diseases)
Isoamyl alcohol	Tableaux des maladies professionnelles (TMP) - RG 84

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

H332 - Harmful if inhaled
H315 - Causes skin irritation
H318 - Causes serious eye damage
H335 - May cause respiratory irritation
H412 - Harmful to aquatic life with long lasting effects
EUH066 - Repeated exposure may cause skin dryness or cracking
H226 - Flammable liquid and vapor

Legend

CAS - Chemical Abstracts Service

EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
IECSC - Chinese Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances

TSCA - United States Toxic Substances Control A Inventory
DSL/NDSL - Canadian Domestic Substances List Substances List
ENCS - Japanese Existing and New Chemical Su
AICS - Australian Inventory of Chemical Substanc
NZIoC - New Zealand Inventory of Chemicals

WEL - Workplace Exposure Limit
ACGIH - American Conference of Governmental Industrial Hygienists
DNEL - Derived No Effect Level

TWA - Time Weighted Average
IARC - International Agency for Research on Can
Predicted No Effect Concentration (PNEC)

Dangerous Goods Code

MARPOL - International Convention for the Preve
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
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 E
hygiene.
Use of personal protective equipment, covering appropriate selection, compatibility, breakthrough thresholds,
and standards.
First aid for chemical exposure, including the use of eye wash and safety showers.
Fire prevention and fighting, identifying hazards and risks, static electricity, explosive atmospheres posed by v
Chemical incident response training.

Creation Date	13-Sep-2010
Revision Date	25-Sep-2023
Revision Summary	SDS sections updated.

**This safety data sheet complies with Regulation UK SI 2019/758 and UK SI
amended.** .

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Disclaimer

**The information provided in this Safety Data Sheet is correct to the best of our knowledge, informatio
date of its publication. The information given is designed only as a guidance for safe handling, use, p
transportation, disposal and release and is not to be considered a warranty or quality specification
relates only to the specific material designated and may not be valid for such material used in combin
materials or in any process, unless specified in the text**

End of Safety Data Sheet