PLANT BIOTECHNOLOGIES
INNOVATING FOR A SUSTAINABLE FUTURE

CARBENICILLIN DISODIUM SOLUTION (100 MG/ML)
SAFETY DATA SHEET

According to Regulation (EC) No. 1907/2006
GENERIC EU SDS - NO COUNTRY SPECIFIC OEL DATA
Date of Issue: 17-02-2026
Revision Number: A/0

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

1.1 Product identifier

Product Identifier	:	Carbenicillin Disodium Solution (100 mg/ml in water
Product Number	:	C005
CAS Number	:	[4800-94-6]
REACH Registration Number	:	A registration number is not available for this substance as the substance or its uses are exempted from registration, the annual tonnage does not require a registration, or the registration is envisaged for a later registration deadline.

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

Identified Uses	:	For research use only - restricted to professional users.
Uses Advised Against	:	Not for human or animal use

1.3 Details of the supplier of the safety data sheet

Company	:	Plant Biotechnologies Seinhuiswachter 17-19 3034 KH Rotterdam The Netherlands
Phone Number	:	+31 10323 2002
E-mail Address	:	info.eu@toku-e.com
Safety Data Sheet Issued by	:	Plant Biotechnologies

1.4 Emergency telephone number

Emergency Phone Number (Internat.)	:	+1 (352) 353-3500 (INFOTRAC, 24-Hour Number)
Emergency Phone Number (US Only)	:	1 (800) 535-5053 (INFOTRAC, 24-Hour Number)

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008

Flammable Liquids (Category 3), H226
Skin Sensitization (Category 1), H317
Respiratory Sensitization (Category 1), H334

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

2.2 Label elements

Labelling according to Regulation (EC) No. 1272/2008

Hazard Pictogram(s):

Signal Word: Danger

Hazard Statement(s)

H226	Flammable liquid and vapour
H317	May cause an allergic skin reaction
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled

Precautionary Statement(s)

P210	Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P233	Keep container tightly closed.
P240	Ground/bond container and receiving equipment.
P241	Use explosion-proof electrical/ventilating/lighting equipment.
P242	Use only non-sparking tools.
P243	Take precautionary measures against static discharge.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P303+P361+	IF ON SKIN (or hair): Take off immediately all contaminated clothing.
P353	Rinse skin with water/shower.
P370+P378	In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction
P403+P235	Store in a well-ventilated place. Keep cool.
P501	Dispose of contents/container in accordance with governmental regulatior
P261	Avoid breathing dust/fumes/gas/mist/vapors/spray.
P272	Contaminated work clothing should not be allowed out of the workplace.
P302+P352	IF ON SKIN: Wash with plenty of water/soap
P333+P313	IF SKIN irritation or rash occurs: Get medical advice/attention.
P321	Specific treatment, see applicable response statements on this label
P362+P364	Take off contaminated clothing and wash it before reuse.
P284	[In case of inadequate ventilation] Wear respiratory protection.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breath
P342+P311	If experiencing respiratory symptoms: call a POISON CENTER or doctor/physician.

Supplemental Hazard Information

No data available

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.2 Mixtures

Synonym(s) : α-Carboxybenzylpenicillindisodium salt; Pyopen; α-Carboxybenzylpenicillin

Formula : $C_{17}H_{16}N_2Na_2O_6S$

Molecular weight : 422,36 g/mol

Hazardous ingredients according to Regulation (EC) No. 1272/2008

Component	Classification	Concentration
Carbenicillin Disodium		
CAS Number [4800-94-6] EC Number [225-360-8]	Skin Sens. 1; H317 Resp. Sens. 1; H334	10 %
Ethanol		
CAS Number [64-17-5] EC Number [200-578-6]	Flam. Liq. 2; H225	20 - 30 %
Water		
CAS Number [7732-18-5] EC Number [231-791-2]	/	60 - 70 %

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

SECTION 4: FIRST-AID MEASURES

4.1 Description of first-aid measures

General information

Consult a doctor/physician if exposed - additional medical care may be required. Show this safety data sheet to the medical provider.

If inhaled

If inhaled, move to fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact

Wash skin thoroughly with soap and water. Remove any contaminated clothing. Consult a physician.

In case of eye contact

Flush eye with water. After initial flush, remove any contact lenses and continue flushing for at least 15 minutes.

If swallowed

Rinse mouth with water. Immediately call a doctor, physician, or poison control center. Never give anything by mouth to an unconscious person.

Self-protection of the first aider
Use personal protective equipment as required. Avoid contact with skin, eyes or clothing. Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent the spread of contamination.

4.2 Most important symptoms/effects, acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

SECTION 5: FIRE-FIGHTING MEASURES

5.1 Extinguishing media
Suitable extinguishing media
Alcohol-resistant foam, dry chemical or carbon dioxide.

Unsuitable extinguishing media
No data available

5.2 Special hazards arising from the substance or mixture
Hazardous Combustion Products
Carbon oxides
Mixture with combustible ingredients.
Vapors are heavier than air and may spread along floors.
Forms explosive mixtures with air at elevated temperatures.
Development of hazardous combustion gases or vapours possible in the event of fire.

5.3 Advice for firefighters
Wear self-contained breathing apparatus if necessary.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Consult the safety measures listed in Section 7 and 8. Use personal protective equipment. Avoid breathing dust, vapors, mist or gas. Avoid direct contact with spilled substances. Ensure adequate ventilation.
Keep away from heat and sources of ignition. Ensure all equipment is electrically grounded.

For personal protection see Section 8.

6.2 Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up
Soak up with inert absorbent material and dispose of as hazardous material.
Keep in suitable, closed containers for disposal.

6.4 Reference to other sections
Refer to section 8 for exposure control and personal protection. Refer to section 13 for disposal information.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling

Keep away from sources of ignition - no smoking. Take measures to prevent the build up of electrostatic charge.
Avoid inhalation of vapor or mist.
For precautionary statements see section 2.2

7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a dry and well-ventilated place. Protect from humidity.
Recommended storage temperature: −20 °C

Incompatibilities:
Strong oxidizing agents

7.3 Specific end use(s)

Refer to section 1.2

SECTION 8: EXPOSURE CONTROLS/ PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters:
No OEL data available

8.2 Exposure controls

Appropriate engineering controls:
Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling this product.

Personal Protective Equipment (PPE):

Respiratory protection
Wear respiratory protection. Use type N95 (US) or type P1 (EN 143) dust masks as a backup to engineering controls. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal techniques to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

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

Eye/Face protection
Wear eye protection. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166 (EU).

Body protection
Wear protective clothing. The type of protective equipment must be selected according to the concentration of the dangerous substance at the specific work place.

Environmental exposure controls
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	:	Clear solution
Odor	:	No data available
Odor Threshold	:	No data available
pH	:	No data available
Melting Point/Freezing Point	:	No data available
Initial Boiling Point and Range	:	No data available
Flash Point	:	No data available
Evaporation rate	:	No data available
Flammability (solid, gas)	:	No data available
Upper/Lower Flammability or Explosive Limits	:	No data available
Vapor Pressure	:	No data available
Vapor Density	:	No data available
Relative Density	:	No data available
Solubility(ies)	:	Soluble in water
Partition Coefficient: n-octanol/water	:	No data available
Auto-Ignition Temperature	:	No data available
Decomposition Temperature	:	No data available
Viscosity	:	No data available
Explosive Properties	:	No data available
Oxidizing Properties	:	No data available

9.2 Other information
No additional information relevant to safe use of the substance.

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity
Vapor/air mixtures are explosive at intense warning.

10.2 Chemical stability
Stable under recommended storage conditions

10.3 Possibility of hazardous reactions
No data available

10.4 Conditions to avoid
Heat, flames and sparks.

10.5 Incompatible materials
Strong oxidizing agents
Alkali metals, ammonia, peroxides

10.6 Hazardous decomposition products
Hazardous decomposition products formed under fire conditions- Carbon oxides

See Section 5 for hazardous combustion products.

SECTION 11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute Toxicity

Oral LD_{50}	:	Rat	:	> 10 g/kg
		Mouse	:	> 12 g/kg
Intraperitoneal LD_{50}	:	Rat	:	10 g/kg
		Mouse	:	7600 mg/kg
Subcutaneous LD_{50}	:	Rat	:	> 10 g/kg
		Mouse	:	9 g/kg

Skin Corrosion/Irritation
No data available

Serious Eye Damage/ Eye Irritation
No data available

Respiratory or Skin Sensitization
Mixture may cause allergy or asthma symptoms or breathing difficulties if inhaled. Mixture may cause an allergic skin reaction.

Germ Cell Mutagenicity
No data available

Carcinogenicity
No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible, or confirmed human carcinogen by the International Agency for Research on Cancer Monograph.

Reproductive Toxicity
No data available

Specific Target Organ Toxicity: Single Exposure
No data available

Specific Target Organ Toxicity: Repeated Exposure
No data available

Aspiration Hazard
No data available

Additional Information
RTECS: ON9105000
Only select Registry of Toxic Effects of Chemical Substances (RTECS) data is presented here. See actual entry in RTECS for complete information.
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

ß-Lactam
ß-lactams are a broad class of antibiotics and include penicillins, cephalosporins, carbapenems and monobactams. Some individuals experience adverse immunological responses or allergic reactions to β-lactams. Because of the structural similarity between these antibiotics, those who are allergic to one class of agents may manifest cross-allergenicity when exposed to a member of another class.

TOKU-E Company assumes this chemical has the potential to induce an allergic reaction in some individuals. To the best of our knowledge, the correlation between this specific material and respiratory or skin sensitization has not been thoroughly investigated.

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity
No data available

12.2 Persistence and degradability
No data available

12.3 Bioaccumulative potential
No data available

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not

12.6 Other adverse effects
No data available

In the absence of complete ecological information, treat product as environmentally hazardou
Use proper storage, handling, and disposal to prevent unintentional release into the environment.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product
Offer surplus and non-recyclable products to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Avoid disposal of material in drains or sewers.

Waste material must be disposed of in accordance with the Directive on Waste 2008/98/EC as well as other national and local regulations.

Contaminated Packaging
Dispose of as unused product.

SECTION 14: TRANSPORT INFORMATION

		ADR/RID	IMDG	IATA
14.1	**UN Number**	UN 1170	UN 1170	UN 1170
14.2	**UN Proper Shipping Name**	Ethanol Solution Ethanol	Ethanol Solution Ethanol	Ethanol Solution Ethanol
14.3	**Transport Hazard Class(es)**	3	3	3
14.4	**Packing Group**	III	III	III
14.5	**Environmental Hazards**	No	Marine Pollutant: No	No

14.6 Special precautions for user

code of E1, E2, E4 or E5, this meets the De Minimus Quantities exemption, per IATA 2.6.10. Therefore packaging does not have to be labeled as Dangerous Goods/Excepted Quantity.

Further Information

No data available

14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

Not applicable.

SECTION 15: REGULATORY INFORMATION

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

This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006 and Annex II No. 2020/878

Authorizations and/or restrictions on use

Restricted to professional users.

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
H226 Flammable liquid and vapour
H317 May cause an allergic skin reaction
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled

Abbreviations and acronyms

ADR/RID: European Agreements Concerning the International Carriage of Dangerous Goods by Road (ADR) and Rail (RID)
CAS No: Chemical Abstracts Service number

EC: European Commission
EC No: European Commission number
EHS: Environmentally Hazardous Substance
EU: European Union
H-Statement: Hazard Statement
IARC: International Agency for Research on Cancer
IATA: International Air Transport Association
IBC: International Bulk Chemical
IMDG: International Maritime Dangerous Goods Code
LC50: Lethal concentration, 50%
LD50: Median Lethal dose
MARPOL 73/78: International Convention for the Prevention of Pollution from Ships
NIOSH: National Institute for Occupation Safety and Health
OEL: Occupational Exposure Limit
PBT: Persistent, Bioaccumulative and Toxic
REACH: Registration, Evaluation, Authorisation and restrictions of Chemicals
RTECS: Registry of Toxic Effects of Chemical Substances
SDS: Safety Data Sheet
UN: United Nations
vPvB: Very Persistent and Very Bioaccumulative

Further information
Revision Date: 17-02-2026

The above information is based upon the present state of our knowledge and is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information is believed to be correct but does not purport to be all inclusive. It does not represent any guarantees of the properties of the product. TOKU-E Company shall not be held liable for damage or injury resulting from contact, handling, or storage of the above product.