

Issue Date 26-06-2006

Revision Date 05-Aug-2024

Version 4.2

SAFETY DATA SHEET

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH)

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

1.1. Product identifier

Product Code(s) LCA555

Product Name LCA555 BOD5 Glucose-glutamic acid standard, Sample cuvette

Unique Formula Identifier (UFI) E5X9-VF58-S803-R35T

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

Recommended Use Standard solution. Determination of biochemical oxygen demand.

Uses advised against Consumer use

1.3. Details of the supplier of the safety data sheet

Supplier

HACH LANGE GmbH Willstätterstr. 11 D-40549 Düsseldorf Tel: +49 (0)211 5288-383 sds@hach.com

Responsible country contact:

HACH UK Laser House Ground Floor, Suite B Waterfront Quay, Salford Quays GB - Manchester, M50 3XW Tel. +44 (0) 161 872 1487 info-uk@hach.com

HACH Ireland Unit 34 GB Business Park Little Island IRL-Co. Cork T45 H681 Tel. +353 (0)146 02 522 info-ie@hach.com

1.4. Emergency telephone number

UK: Chemtrec: +44 20 3807 3798 IE: National Poisons Information Centre (NPIC) 01 809 2566 (24/7)

Section 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

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

Oxidising solids	Category 3 - (H272)
Acute toxicity - Oral	Category 4 - (H302)
Serious eye damage/eye irritation	Category 2 - (H319)

2.2. Label elements

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

Contains Sodium nitrate



Signal word Warning

Hazard statements H272 - May intensify fire; oxidiser H302 - Harmful if swallowed H319 - Causes serious eye irritation

Contains Sodium nitrate

Precautionary statements

P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking
P220 - Keep away from clothing and other combustible materials
P280 - Wear protective gloves and eye/face protection
P337 + P313 - If eye irritation persists: Get medical advice/attention

2.3. Other hazards

No information available.

PBT & vPvB

This mixture contains no substance considered to be persistent, bioaccumulating or toxic (PBT) This mixture contains no substance considered to be very persistent nor very bioaccumulating (vPvB)

Endocrine Disruptor Information

This product does not contain any known or suspected endocrine disruptors.

Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Not applicable

3.2 Mixtures

Chemical name	CAS No. EC No. Index No.	Weight-%	Classification according to Regulation (EC) No. 1272/2008 [CLP]	Specific concentration limit (SCL)	M-Factor	M-Factor (long-term)
Sodium nitrate	7631-99-4 231-554-3 -	90 - 100%	Ox. Sol. 3 - H272 Acute Tox. 4 - H302 Eye Irrit. 2 - H319		-	-

Full text of H- and EUH-phrases: see section 16

Acute Toxicity Estimate No information available

Chemical	name	Oral LD50	Dermal LD50	Inhalation LC50 - 4 hour - dust/mist - mg/L		Inhalation LC50 - 4 hour - gas - ppm
Sodium n 7631-9		3430 mg/kg	None reported	None reported	None reported	None reported

Section 4: FIRST AID MEASURES

4.1. Description of first aid measures

General advice	Show this safety data sheet to the doctor in attendance.		
Inhalation	Remove to fresh air.		
Eye contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Do not rub affected area. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.		
Skin contact	IF ON CLOTHING: rinse immediately contaminated clothing and skin with plenty of water before removing clothes. IF ON SKIN: Wash with plenty of soap and water. Wash contaminated clothing before reuse.		
Ingestion	Do NOT induce vomiting. Rinse mouth. Never give anything by mouth to an unconscious person. Call a doctor.		
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. Use personal protective equipment as required. See section 8 for more information. Avoid contact with skin, eyes or clothing.		
4.2. Most important symptoms and effects, both acute and delayed			
Symptoms	Nausea or vomiting. May cause redness and tearing of the eyes. Burning sensation.		
4.3. Indication of any immediate medical attention and special treatment needed			
Note to doctors	Treat symptomatically.		

Section 5: FIREFIGHTING MEASURES

5.1. Extinguishing media

Suitable Extinguishing Media	Product itself does not burn. Use water. Do not use dry chemicals or foams. CO ₂ or Halon may provide limited control. Flood fire area with water from a distance. Move containers
	from fire area if you can do it without risk. Cool containers with flooding quantities of water until well after fire is out.

Unsuitable extinguishing media Dry chemical. Foam.

5.2. Special hazards arising from the substance or mixture

Specific hazards arising from the chemical These substances will accelerate burning when involved in a fire. Some may decompose explosively when heated or involved in a fire. May ignite combustibles (wood paper, oil, clothing, etc.). Runoff may create fire or explosion hazard.

5.3. Advice for firefighters

Special protective equipment and precautions for fire-fighters	Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment. Do not move cargo or vehicle if cargo has been exposed to heat. Oxidiser. May ignite combustibles (wood paper, oil, clothing, etc.). Move containers from fire area if you can do it without risk. Fight fire from maximum distance or use unmanned hose holders or monitor nozzles. ALWAYS stay away from tanks engulfed in fire. For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible withdraw from area and let fire burn.

Additional information Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

Section 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions	Ensure adequate ventilation. Avoid contact with skin, eyes or clothing. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. See section 8 for more information. Stop leak if you can do it without risk. Use personal protective equipment as required.		
For emergency responders	Use personal protection recommended in Section 8.		
6.2. Environmental precautions			
Environmental precautions	Prevent entry into waterways, sewers, basements or confined areas. Do not flush into surface water or sanitary sewer system. Prevent further leakage or spillage if safe to do so. Prevent product from entering drains.		
6.3. Methods and material for conta	tainment and cleaning up		
Methods for containment	Stop leak if you can do it without risk. Cover with DRY earth, DRY sand or other non-combustible material followed with plastic sheet to minimise spreading or contact with rain.		
Methods for cleaning up	With clean shovel place material into clean, dry container and cover loosely; move		

	containers from spill area. Flush area with flooding quantities of water. Prevent product from entering drains. Cover powder spill with plastic sheet or tarp to minimise spreading and keep powder dry. Avoid creating dust.
Prevention of secondary hazards	Clean contaminated objects and areas thoroughly observing environmental regulations.
6.4. Reference to other sections	
Reference to other sections	See section 8 for more information. See section 13 for more information.

Section 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Advice on safe handling	Use personal protection equipment. Avoid contact with skin, eyes or clothing. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Do not eat, drink or smoke when using this product. Remove contaminated clothing and shoes. Use with local exhaust ventilation. Handle in accordance with good industrial hygiene and safety practice.
General hygiene considerations	Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product. Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Avoid creating dust.
7.2. Conditions for safe storage, inc	cluding any incompatibilities

Storage Conditions Keep containers tightly closed in a dry, cool and well-ventilated place. Keep in properly labelled containers. Do not store near combustible materials. Keep out of the reach of children.

7.3. Specific end use(s)

Specific use(s)	Analytical reagent.
Risk Management Methods (RMM)	The information required is contained in this Safety Data Sheet.

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

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

Derived No Effect Level (DNEL) No information available

Predicted No Effect Concentration (PNEC) No information available.

8.2. Exposure controls

Engineering controls Technical measures and appropriate working operations should be given priority over the

use of personal protective equipment. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Personal protective equipment Eye/face protection

Tight sealing safety goggles. Wear safety glasses with side shields (or goggles).

Hand protection

Gloves must be inspected prior to use. The selected protective gloves have to satisfy the specifications of EU Directive 2016/425 and the standard EN 374-1:2016 derived from it. Chemical resistant gloves made of butyl rubber or nitrile rubber category III acco. Wear suitable gloves. Impervious gloves. Barrier creams may help to protect the exposed areas of skin.

Gloves				
Duration of contact	PPE - Glove material	Glove thickness	Break through time	
Long term (repeated)	Wear protective Viton™	0,70 mm	>480 minutes	
	gloves			
Short term	Wear protective nitrile rubber gloves	0,20 mm	>30 minutes	
Skin and body protection	Wear suitable protective clothing. Long sleeved clothing. Wear fire/flame resistant/retardant clothing.			
Respiratory protection	Wear breathing apparatus if ex	xposed to vapours/dusts/aeros	sols.	
Recommended filter type:	ABEK-P3.			
General hygiene considerations	Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product. Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Avoid creating dust.			
Environmental exposure controls	Do not allow into any sewer, on the ground or into any body of water.			

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Odour Slight unpleasant

9.1. Information on basic physical and chemical properties

Physical state Powder

Colour white

Odour threshold No data available

Property	Values	Remarks • Method
Molecular weight	No data available	
рН	5.5 - 8	@ 20 °C
Melting point / freezing point	No data available	
Initial boiling point and boiling range	No data available	
Evaporation rate	No data available	

Vapour pressure	No data available	
Relative vapor density	No data available	
Partition coefficient	No data available	
Soil Organic Carbon-Water Partition Coefficient	No data available	
Autoignition temperature	No data available	
Decomposition temperature	No data available	
Dynamic viscosity	No data available	
Kinematic viscosity Relative density	No data available 2.26 g/cm ³	@ 20 °C

Solubility(ies)

Water solubility

Water solubility classification	Water solubility	Water Solubility Temperature
Soluble	> 1000 mg/L	25 °C / 77 °F

Solubility in other solvents

Chemical Name	al Name Solubility classification Solubility		Solubility Temperature
None reported	No information available	No data available	No information available

Metal Corrosivity

Steel Corrosion Rate Aluminum Corrosion Rate	No data available No data available
Explosive properties	
Upper explosion limit Lower explosion limit	No data available No data available
Flammable properties	
Flash point	No data available
Flammability	
Upper flammability limit: Lower flammability limit	No data available No data available
Oxidising properties	No data available.
Bulk density	No data available
9.2. Other information	

No information available.

Section 10: STABILITY AND REACTIVITY

10.1. Reactivity						
Reactivity	Oxidiser.					
10.2. Chemical stability						
Stability	May cause fire or explosion; strong oxidiser.					
10.3. Possibility of hazardous react	ions					
Possibility of hazardous reactions	None under normal processing.					
10.4. Conditions to avoid	10.4. Conditions to avoid					
Conditions to avoid	Heat, flames and sparks. Incompatible materials.					
10.5. Incompatible materials						
Incompatible materials	Organic material. Combustible material. Hydrocarbons.					
10.6. Hazardous decomposition products						
Hazardous Decomposition Products Nitrous Acid. Nitrogen oxides (NOx).						

Section 11: TOXICOLOGICAL INFORMATION

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

Acute toxicity

Based on available data, the classification criteria are not met

Mixture	No data available.
Substance	No data available.

Oral Exposure Route:

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Sodium nitrate	Rat	3430 mg/kg	None reported	None reported	Vendor SDS
	LD50				OECD 401
Glucose	Rat LD50	> 5000 mg/kg	None reported	None reported	GESTIS
L-Glutamic acid	Rat LD50	> 30000 mg/kg	None reported	None reported	Vendor SDS

Acute Toxicity Estimate (ATE) Not applicable

ATEmix (oral)	1.350.00 ma/ka
ATEmix (oral)	1,550.00 mg/kg

Unknown acute toxicity

0.001 % of the mixture consists of ingredient(s) of unknown toxicity.

0.001 % of the mixture consists of ingredient(s) of unknown acute oral toxicity

Skin corrosion/irritation Based on available data, the classification criteria are not met. No data available. Mixture No data available. Substance Serious eye damage/eye irritation Classification based on data available for ingredients. Causes serious eye irritation. Mixture No data available. Substance No data available. **Respiratory or skin sensitisation** Based on available data, the classification criteria are not met. Mixture No data available. No data available. Substance STOT - single exposure Based on available data, the classification criteria are not met. No data available. Mixture Substance No data available. STOT - repeated exposure Based on available data, the classification criteria are not met. Mixture No data available. Substance No data available. Germ cell mutagenicity Based on available data, the classification criteria are not met. Mixture invitro Data No data available. Substance invitro Data Test data reported below.

Chemical name	Test	Cell Strain	Reported dose	Exposure time	Results	Key literature references and sources for data
L-Glutamic acid	Sister chromatid exchange	Human lymphocyte	10 mg/L	None reported	Positive test result for mutagenicity	RTECS

Mixture invivo Data

No data available.

Substance invivo Data

Test data reported below.

Oral Exposure Route:

Carcinogenicity

Based on available data, the classification criteria are not met.

Mixture

No data available.

Substance

Test data reported below.

Oral Exposure Route:

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Sodium nitrate	Rat	100000 mg/kg	2 years	Reproductive Testicular tumors	RTECS
				Skin and Appendages Tumors	

Reproductive toxicity

Based on available data, the classification criteria are not met.

Mixture No data available.

Substance No data available.

Aspiration hazard

Based on available data, the classification criteria are not met.

11.2. Information on other hazards

Other dangerous properties can not be excluded. Handle in accordance with good industrial hygiene and safety practice.

11.2.1. Endocrine disrupting properties

Endocrine disrupting properties This product does not contain any known or suspected endocrine disruptors.

11.2.2. Other information Other adverse effects

No information available.

Section 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Ecotoxicity	Based on available data, the classification criteria are not met.	
Unknown aquatic toxicity	Contains 0.001 % of components with unknown hazards to the aquatic environment.	
<u>Mixture</u>		
Acute aquatic toxicity:	No data available.	
Aquatic Chronic Toxicity:	No data available.	
Substance		
Acute aquatic toxicity:	No data available.	

Fish:

Chemical name	Exposure time	Species	Endpoint type	Reported dose	Key literature references and sources for data
Sodium nitrate	96 hours	Lepomis macrochirus	LC50	2000 mg/L	GESTIS

Aquatic Chronic Toxicity:

No data available.

12.2. Persistence and degradability

Mixture	No data available.
12.3. Bioaccumulative potential	
Mixture:	No data available.
Partition coefficient	No data available
12.4. Mobility in soil	
Soil Organic Carbon-Water Partition Coefficient	No data available

12.5. Results of PBT and vPvB assessment

The components in this formulation do not meet the criteria for classification as PBT or vPvB.

Chemical name	PBT and vPvB assessment
Sodium nitrate	The substance is not PBT / vPvB

12.6. Endocrine disrupting properties

Endocrine Disruptor Information: This product does not contain any known or suspected endocrine disruptors

12.7. Other adverse effects

No information available.

Ozone: Not applicable

Ozone depletion potential (ODP): No information available

Section 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Advice on Disposal

Waste from residues/unused
productsShould not be released into the environment. Dispose of in accordance with local
regulations. Dispose of waste in accordance with environmental legislation.

Waste disposal number (residues/unused products)

160506	WASTES NOT OTHERWISE SPECIFIED IN THE LIST; gases in pressure containers and discarded chemicals; laboratory chemicals, consisting of or containing hazardous substances, including mixtures of laboratory chemicals; hazardous waste.
Waste disposal number (used product)	
160506	WASTES NOT OTHERWISE SPECIFIED IN THE LIST; gases in pressure containers and discarded chemicals; laboratory chemicals, consisting of or containing hazardous substances, including mixtures of laboratory chemicals; hazardous waste.
Contaminated packaging	Dispose of contents/containers in accordance with local regulations.
Other Information	Waste codes should be assigned by the user based on the application for which the product was used.

Section 14: TRANSPORT INFORMATION

ADR 14.1 UN number or ID number 14.2 UN proper shipping name 14.3 Transport hazard class(es) 14.4 Packing Group 14.5 Environmental hazards 14.6 Special precautions for user Special Provisions Classification code Tunnel restriction code	3316 CHEMICAL KIT 9 Not regulated Not applicable 251, 340, 671 M11 (E)
IATA 14.1 UN number or ID number 14.2 UN proper shipping name 14.3 Transport hazard class(es) 14.4 Packing group 14.5 Environmental hazards 14.6 Special precautions for user Special Provisions	UN3316 Chemical kit 9 Not regulated Not applicable None
IMDG14.1UN number or ID number14.2UN proper shipping name14.3Transport hazard class(es)14.4Packing Group14.5Environmental hazards14.6Special precautions for user Special Provisions EmS-No14.7Maritime transport in bulk according to IMO instruments	UN3316 CHEMICAL KIT 9 Not regulated Not applicable 251, 340 F-A, S-P No information available

Additional information

This product forms part of a kit. Information in this section relates to the kit as a whole. If the item is not regulated, the Chemical Kit classification does not apply.

Section 15: REGULATORY INFORMATION

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

National regulations

European Union

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

Persistent Organic Pollutants Not applicable

Dangerous substance category per Seveso Directive (2012/18/EU)

• P8 - OXIDISING LIQUIDS AND SOLIDS

Ozone-depleting substances (ODS) regulation (EC) 1005/2009 Not applicable

Germany

Water hazard class (WGK)

slightly hazardous to water (WGK 1)

Complies
Complies

EINECS/ELINCS - European Inventory of Existing Chemical Substances/European 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 **ENCS** - Japan Existing and New Chemical Substances **IECSC** - China Inventory of Existing Chemical Substances KECL - Korean Existing and Evaluated Chemical Substances PICCS - Philippines Inventory of Chemicals and Chemical Substances

AICS - Australian Inventory of Chemical Substances

15.2. Chemical safety assessment

Chemical Safety Report

Chemical safety assessments for substances in this mixture were not carried out.

	Section 16: OTHER INFORMATION
Issue Date	26-06-2006
Revision Date	05-Aug-2024
Revision Note	updated SDS sections: 3 9 11 12

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

Legend

**	Hazard Designation
ADN	Accord européen relatif au transport international des marchandises dangereuses par voies
	de navigation intérieure
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE	Acute Toxicity Estimate
CAS	Chemical Abstracts Service Number
Ceiling	Maximum limit value
CLP	Classification, Labelling and Packaging of substances and mixtures [Regulation (EC) No.
	1272/2008]
DNEL	Derived No Effect Level (DNEL)
EC	European Community
ECHA	ECHA (The European Chemicals Agency)
EC50	Effective Concentration to 50% of a test population
EEC	European Economic Community
EN	European Standard
IMDG	International Maritime Dangerous Goods (IMDG)
IATA	International Air Transport Association (IATA)
IATA-DGR	
ICAO	International Air Transport Association - Dangerous Goods Regulations International Civil Aviation Organization
ICAO-TI IUCLID	International Civil Aviation Organization - Technical Instructions IUCLID (The International Uniform Chemical Information Database)
GHS	
	Globally Harmonized System of Classification and Labelling of Chemicals
LOAEL	Lowest observed adverse effect level
LOAEC	Lowest observed adverse effect concentration
LC50	Lethal Concentration to 50% of a test population
LD50	Lethal Dose to 50% of a test population (Median Lethal Dose)
LOLI	LOLI (List of Lists - An International Chemical Regulatory Database)
MAK	Maximale Arbeitsplatz-Konzentration, a German expression corresponding to threshold limit
NOAFI	value, which relates to safe daily exposure levels to chemical substances
NOAEL	NOAEL (No observed adverse effect level)
NOAEC	No observed adverse effect concentration
OSHA	OSHA (Occupational Safety and Health Administration of the US Department of Labour)
PEC	Predicted Effect Concentration
PNEC	Predicted No Effect Concentration (PNEC)
PBT	Persistent, Bioaccumulative, and Toxic (PBT) Chemicals
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals [Regulation (EC) No.
	1907/2006])
RTECS	RTECS (Registry of Toxic Effects of Chemical Substances)
TWA	TWA (time-weighted average)
SKN*	Skin designation
SKN+	Skin sensitisation
STEL	STEL (Short Term Exposure Limit)
STOT	Specific Target Organ Toxicity
STOT RE	Specific target organ toxicity — repeated exposure
STOT SE	Specific target organ toxicity — single exposure
SVHC	Substances of Very High Concern
TLV	Threshold Limit Value
TRGS	Technical rules for hazardous substances, Germany
TSCA	Toxic Substances Control Act
UN	United Nations
vPvB	very persistent and very bioaccumulative
VOC	Volatile organic compounds
AwSV	Administrative regulation of water polluting substances, Germany

Key literature references and sources for data See Section 11: TOXICOLOGICAL INFORMATION See Section 12: ECOLOGICAL INFORMATION

Classification procedure

Classification according to Regulation (EC) No. 1272/2008 [CLP]	Method Used
Acute oral toxicity	Calculation method
Acute dermal toxicity	Calculation method
Acute inhalation toxicity - gas	Calculation method
Acute inhalation toxicity - Vapour	Calculation method
Acute inhalation toxicity - dust/mist	Calculation method
Skin corrosion/irritation	Calculation method
Serious eye damage/eye irritation	Calculation method
Respiratory sensitisation	Calculation method
Skin sensitisation	Calculation method
Mutagenicity	Calculation method
Carcinogenicity	Calculation method
Reproductive toxicity	Calculation method
STOT - single exposure	Calculation method
STOT - repeated exposure	Calculation method
Acute aquatic toxicity	Calculation method
Chronic aquatic toxicity	Calculation method
Aspiration toxicity	Calculation method
Ozone	Calculation method
Oxidising solids	On basis of test data

Training Advice

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

Restrictions on use

For Laboratory Use Only.

This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006

End of Safety Data Sheet