



# Harlequin® Modified Chromogenic Agar for Salmonella Esterase (mCASE)

## Safety Data Sheet

according to 29 CFR § 1910.1200, Hazard Communication Standard (HCS)  
Issue date: 12/17/2024 Revision date: 6/9/2025 Supersedes: 4/24/2025 Version: 2.0

### SECTION 1 Identification

#### 1.1. Product identifier

Product form : Mixture  
Trade name : Harlequin® Modified Chromogenic Agar for Salmonella Esterase (mCASE)  
Product code : NCM1016

#### 1.2. Other means of identification

Part Number(s) : NCM1016|700004840|700004844

#### 1.3. Recommended use of the chemical and restrictions on use

Use of the substance/mixture : Laboratory chemicals, Scientific research and development

#### 1.4. Supplier's details

Neogen Corporation  
620 Leshler Place  
Lansing, Michigan 48912  
United States of America  
T 800.234.5333  
[sds@neogen.com](mailto:sds@neogen.com) - <https://www.neogen.com/>

#### 1.5. Emergency phone number

Emergency number : 24 hours:  
Medical: 1-800-498-5743 (U.S. and Canada) or 1-651-523-0318 (international)  
Spill/CHEMTREC: 1-800-424-9300 (U.S. and Canada) or 1-703-527-3887 (international)

### SECTION 2 Hazard Identification

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

##### GHS US classification

Skin sensitization, Category 1 H317 May cause an allergic skin reaction.  
Full text of H statements : see section 16

#### 2.2. Label elements

##### GHS US labeling

Hazard pictograms (GHS US) :



Signal word (GHS US) : Warning  
Hazard statements (GHS US) : H317 - May cause an allergic skin reaction  
Precautionary statements (GHS US) : P261 - Avoid breathing dust, fume, gas, mist, vapors, spray.  
P272 - Contaminated work clothing must not be allowed out of the workplace.  
P280 - Wear protective gloves, protective clothing, eye protection, face protection, and hearing protection.  
P302+P352 - If on skin: Wash with plenty of water.  
P321 - Specific treatment (see supplemental first aid instruction on this label).  
P333+P313 - If skin irritation or rash occurs: Get medical advice or attention.

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P362+P364 - Take off contaminated clothing and wash it before reuse.  
P501 - Dispose of contents and/or container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulations.

### 2.3. Hazards associated with known or reasonably anticipated uses

No additional information available

### 2.4. Hazards not otherwise classified

No additional information available

### 2.5. Unknown acute toxicity

35.09% of the mixture consists of ingredient(s) of unknown acute toxicity (Oral)  
66.17% of the mixture consists of ingredient(s) of unknown acute toxicity (Dermal)  
51.13% of the mixture consists of ingredient(s) of unknown acute toxicity (Inhalation (Dust/Mist))

## SECTION 3 Composition/information on ingredients

### 3.1. Substances

Not applicable

### 3.2. Mixtures

Name	Product identifier	%	GHS US classification
Kaolin	CAS-No.: 1332-58-7	15 – 25	Acute Tox. 4 (Inhalation:dust,mist), H332
Sodium deoxycholate	CAS-No.: 302-95-4	1 – 5	Acute Tox. 4 (Oral), H302 STOT SE 3, H335
Oxbile (Oxgall)	CAS-No.: 8008-63-7	1 – 5	Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT SE 3, H335
Sodium pyruvate	CAS-No.: 113-24-6	1 – 5	Eye Irrit. 2, H319 Skin Sens. 1B, H317
D-(+)-Cellobiose	CAS-No.: 528-50-7	1 – 5	Aquatic Acute 2, H401 Aquatic Chronic 2, H411

Full text of hazard classes and H-statements : see section 16

## SECTION 4 First aid measures

### 4.1. Description of necessary first-aid measures

First-aid measures general : If you feel unwell, seek medical advice.  
First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing.  
First-aid measures after skin contact : Wash skin with plenty of water. Take off contaminated clothing. If skin irritation or rash occurs: Get medical advice/attention.  
First-aid measures after eye contact : Rinse eyes with water as a precaution.  
First-aid measures after ingestion : Call a poison center/doctor/physician if you feel unwell.

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

Symptoms/effects after inhalation : None under normal conditions. Dust of the product, if present, may cause respiratory irritation after an excessive inhalation exposure.

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Symptoms/effects after skin contact	: May cause an allergic skin reaction.
Symptoms/effects after eye contact	: None under normal conditions. Dust from this product may cause eye irritation.
Symptoms/effects after ingestion	: None under normal conditions.

### 4.3. Indication of immediate medical attention and special treatment needed, if necessary

Other medical advice or treatment : Treat symptomatically.

## SECTION 5: Fire-fighting measures

### 5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media	: Water spray. Dry powder. Foam.
Unsuitable extinguishing media	: Do not use a heavy water stream.

### 5.2. Specific hazards arising from the chemical

Fire hazard	: No fire hazard.
Explosion hazard	: No direct explosion hazard.
Hazardous decomposition products in case of fire	: Toxic fumes may be released.

### 5.3. Special protective equipment and precautions for fire-fighters

Firefighting instructions	: Fight fire from safe distance and protected location. Do not enter fire area without proper protective equipment, including respiratory protection.
Protection during firefighting	: Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

## SECTION 6 Accidental release measures

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

General measures : Notify authorities if product enters sewers or public waters. Absorb spillage to prevent material-damage.

#### For non-emergency personnel

Protective equipment	: Wear recommended personal protective equipment.
Emergency procedures	: Ventilate spillage area. Avoid contact with skin and eyes. Avoid breathing dust/fume/gas/mist/vapors/spray.

#### For emergency responders

Protective equipment	: Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".
Emergency procedures	: Evacuate unnecessary personnel.
Environmental precautions	: Avoid release to the environment.

### 6.2. Methods and materials for containment and cleaning up

For containment	: Using a clean shovel, put the material in a dry container and cover without compressing it.
Methods for cleaning up	: Mechanically recover the product.
Other information	: Dispose of materials or solid residues at an authorized site.

For further information refer to section 13

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### SECTION 7 Handling and storage

#### 7.1. Precautions for safe handling

Precautions for safe handling	: Ensure good ventilation of the work station. Avoid contact with skin and eyes. Avoid breathing dust/fume/gas/mist/vapors/spray. Wear personal protective equipment.
Hygiene measures	: Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

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

Technical measures	: Keep in a cool, well-ventilated place away from heat.
Storage conditions	: Keep cool. Protect from sunlight.
Storage temperature	: 2 – 8 °C
Packaging materials	: Store always product in container of same material as original container.

### SECTION 8 Exposure controls/personal protection

#### 8.1. Control parameters

##### Kaolin (1332-58-7)

##### USA - ACGIH - Occupational Exposure Limits

Local name	Kaolin
ACGIH® TLV® TWA	2 mg/m <sup>3</sup> (Respirable fraction. The value is for particulate matter containing no asbestos and < 1% crystalline silica)
Remark (ACGIH)	TLV® Basis: Pneumoconiosis. Notations: A4 (Not classifiable as a Human Carcinogen)
Regulatory reference	ACGIH 2025

##### USA - OSHA - Occupational Exposure Limits

Local name	Kaolin
OSHA PEL TWA	15 mg/m <sup>3</sup> (Total dust) 5 mg/m <sup>3</sup> (Respirable fraction)
Regulatory reference (US-OSHA)	OSHA Annotated Table Z-1

##### USA - Cal/OSHA - Occupational Exposure Limits

Local name	Kaolin; (containing no asbestos and <1% crystalline silica)
Cal/OSHA PEL (OEL TWA)	2 mg/m <sup>3</sup> (Respirable dust)
Regulatory reference	California Division of Occupational Safety and Health (Cal/OSHA) - Permissible Exposure Limit for Chemical Contaminants (Table AC-1)

##### USA - NIOSH - Occupational Exposure Limits

Local name	Kaolin
NIOSH REL 10h TWA	10 mg/m <sup>3</sup> (Total dust) 5 mg/m <sup>3</sup> (Respirable fraction)
Regulatory reference (US-NIOSH)	OSHA Annotated Table Z-1 (NIOSH Pocket Guide to Chemical Hazards (NPG))

#### 8.2. Appropriate engineering controls

Appropriate engineering controls	: Ensure good ventilation of the work station.
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Environmental exposure controls : Avoid release to the environment.

### 8.3. Individual protection measures, such as personal protective equipment

#### Personal protective equipment:

Wear recommended personal protective equipment.

<b>Hand protection:</b>
Protective gloves
<b>Eye protection:</b>
Safety glasses
<b>Skin and body protection:</b>
Wear suitable protective clothing
<b>Respiratory protection:</b>
In case of insufficient ventilation, wear suitable respiratory equipment

#### Personal protective equipment symbol(s):



## SECTION 9 Physical and chemical properties

### 9.1. Basic physical and chemical properties

Physical state	: Solid
Appearance	: Powder.
Color	: White Off-white
Odor	: Characteristic
Odor threshold	: No data available
pH	: 7.1 – 7.5
Melting point	: No data available
Freezing point	: Not applicable
Boiling point	: No data available
Flash point	: Not applicable
Flammability (solid, gas)	: Non flammable.
Vapor pressure	: No data available
Relative vapor density at 20°C	: No data available
Relative density	: No data available
Solubility	: Soluble in water.
Partition coefficient n-octanol/water (Log Pow)	: No data available
Auto-ignition temperature	: Not applicable
Decomposition temperature	: No data available
Viscosity, kinematic	: Not applicable
Explosion limits	: Not applicable
Particle characteristics	: No data available

### 9.2. Data relevant with regard to physical hazard classes (supplemental)

No additional information available

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### SECTION 10 Stability and reactivity

#### 10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

#### 10.2. Chemical stability

Stable under normal conditions.

#### 10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

#### 10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

#### 10.5. Incompatible materials

No additional information available

#### 10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

### SECTION 11 Toxicological information

#### 11.1. Information on toxicological effects

Acute toxicity (oral) : Not classified  
Acute toxicity (dermal) : Not classified  
Acute toxicity (inhalation) : Not classified.

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Unknown acute toxicity (GHS US)	35.09% of the mixture consists of ingredient(s) of unknown acute toxicity (Oral) 66.17% of the mixture consists of ingredient(s) of unknown acute toxicity (Dermal) 51.13% of the mixture consists of ingredient(s) of unknown acute toxicity (Inhalation (Dust/Mist))
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#### Kaolin (1332-58-7)

LD50 oral rat	> 5000 mg/kg Source: HSDB
LD50 dermal rat	> 5000 mg/kg Source: HSDB
LC50 Inhalation - Rat (Dust/Mist)	≥ 5 mg/l Source: OSHRI GLP toxicity test
ATE US (dust, mist)	1.5 mg/l/4h

#### Sodium pyruvate (113-24-6)

LD50 oral	3533 mg/kg body weight (Mouse, Experimental value, Oral)
LD50 dermal rat	> 3000 mg/kg body weight (Rat, Male, Experimental value, Intraperitoneal)
ATE US (oral)	3533 mg/kg body weight

#### Sodium deoxycholate (302-95-4)

LD50 oral rat	1370 mg/kg (Rat, Oral)
ATE US (oral)	1370 mg/kg body weight

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Skin corrosion/irritation : Not classified  
pH: 7.1 – 7.5

Kaolin (1332-58-7)	
pH	4.5 Source: hsdB
Sodium pyruvate (113-24-6)	
pH	7 (10 %)
Sodium deoxycholate (302-95-4)	
pH	7.5 – 9 (2 %)

Serious eye damage/irritation : Not classified  
pH: 7.1 – 7.5

Kaolin (1332-58-7)	
pH	4.5 Source: hsdB
Sodium pyruvate (113-24-6)	
pH	7 (10 %)
Sodium deoxycholate (302-95-4)	
pH	7.5 – 9 (2 %)

Respiratory or skin sensitization : May cause an allergic skin reaction.

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified

Reproductive toxicity : Not classified

STOT-single exposure : Not classified

Ox bile (Oxgall) (8008-63-7)	
STOT-single exposure	May cause respiratory irritation.

Sodium deoxycholate (302-95-4)	
STOT-single exposure	May cause respiratory irritation.

STOT-repeated exposure : Not classified

Aspiration hazard : Not classified

Harlequin® Modified Chromogenic Agar for Salmonella Esterase (mCASE)	
Viscosity, kinematic	Not applicable
Sodium pyruvate (113-24-6)	
Viscosity, kinematic	Not applicable (solid)
Sodium deoxycholate (302-95-4)	
Viscosity, kinematic	Not applicable (solid)

Symptoms/effects after inhalation : None under normal conditions. Dust of the product, if present, may cause respiratory irritation after an excessive inhalation exposure.

Symptoms/effects after skin contact : May cause an allergic skin reaction.

Symptoms/effects after eye contact : None under normal conditions. Dust from this product may cause eye irritation.

Symptoms/effects after ingestion : None under normal conditions.

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### SECTION 12 Ecological information

#### 12.1. Ecotoxicity

Ecology - general	: The product is not considered harmful to aquatic organisms or to cause long-term adverse effects in the environment.
Hazardous to the aquatic environment, short-term (acute)	: Not classified
Hazardous to the aquatic environment, long-term (chronic)	: Not classified

Sodium pyruvate (113-24-6)	
LC50 - Fish [1]	> 100 mg/l (96 h, Pisces, QSAR, Nominal concentration)
EC50 - Crustacea [1]	> 100 mg/l (OECD 202: Daphnia sp. Acute Immobilisation Test, 48 h, Daphnia magna, Static system, Fresh water, Experimental value, Nominal concentration)
EC50 72h - Algae [1]	2.78 mg/l Test organisms (species): Raphidocelis subcapitata (previous names: Pseudokirchneriella subcapitata, Selenastrum capricornutum)
EC50 96h - Algae [1]	94800000 mg/l Source: ECOSAR
ErC50 algae	> 3 mg/l (OECD 201: Alga, Growth Inhibition Test, 72 h, Pseudokirchneriella subcapitata, Static system, Fresh water, Experimental value, GLP)
NOEC (chronic)	3.95 mg/l Test organisms (species): Duration: '28 d'

D-(+)-Cellobiose (528-50-7)	
EC50 - Crustacea [1]	> 100 mg/l Test organisms (species): Daphnia magna
EC50 72h - Algae [1]	≈ 21.86 mg/l Test organisms (species): Raphidocelis subcapitata (previous names: Pseudokirchneriella subcapitata, Selenastrum capricornutum)
EC50 72h - Algae [2]	≈ 4.6 mg/l Test organisms (species): Raphidocelis subcapitata (previous names: Pseudokirchneriella subcapitata, Selenastrum capricornutum)

Sodium deoxycholate (302-95-4)	
LC50 - Fish [1]	1592.185 mg/l Source: ECOSAR
EC50 96h - Algae [1]	968.709 mg/l Source: ECOSAR

#### 12.2. Persistence and degradability

Harlequin® Modified Chromogenic Agar for Salmonella Esterase (mCASE)	
Persistence and degradability	Not rapidly degradable
Kaolin (1332-58-7)	
Persistence and degradability	Biodegradability: not applicable.
Chemical oxygen demand (COD)	Not applicable (inorganic)
ThOD	Not applicable (inorganic)
Oxbile (Oxgall) (8008-63-7)	
Persistence and degradability	Not rapidly degradable
Sodium pyruvate (113-24-6)	
Persistence and degradability	Readily biodegradable in water.

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D-(+)-Cellobiose (528-50-7)	
Persistence and degradability	Biodegradability in water: no data available.

Sodium deoxycholate (302-95-4)	
Persistence and degradability	Biodegradability in water: no data available.

### 12.3. Bioaccumulative potential

Kaolin (1332-58-7)	
Bioaccumulative potential	No bioaccumulation data available.

Sodium pyruvate (113-24-6)	
Partition coefficient n-octanol/water (Log Pow)	-3.8 (Practical experience/observation, OECD 107: Partition Coefficient (n-octanol/water): Shake Flask Method, 20 °C)
Bioaccumulative potential	Not bioaccumulative.

D-(+)-Cellobiose (528-50-7)	
Partition coefficient n-octanol/water (Log Pow)	-5.03 (Estimated value)
Bioaccumulative potential	Not bioaccumulative.

Sodium deoxycholate (302-95-4)	
Partition coefficient n-octanol/water (Log Pow)	1.24 (Estimated value)
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).

### 12.4. Mobility in soil

Kaolin (1332-58-7)	
Ecology - soil	No (test)data on mobility of the substance available.

Sodium pyruvate (113-24-6)	
Surface tension	No data available in the literature
Ecology - soil	No (test)data on mobility of the substance available.

Sodium deoxycholate (302-95-4)	
Ecology - soil	No (test)data on mobility of the substance available.

### 12.5. Other adverse effects

Ozone	: Not classified
Fluorinated greenhouse gases	: No

## SECTION 13 Disposal considerations

Regional waste regulation	: Disposal must be done according to official regulations.
Waste treatment methods	: Dispose of contents/container in accordance with licensed collector's sorting instructions.
Sewage disposal recommendations	: Disposal must be done according to official regulations.
Product/Packaging disposal recommendations	: Comply with applicable regulations for solid waste disposal. Disposal must be done according to official regulations.
Additional information	: Do not re-use empty containers.

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### SECTION 14 Transport information

In accordance with DOT / TDG / IMDG / IATA

DOT	TDG	IMDG	IATA
<b>14.1. UN number</b>			
Not regulated for transport			
<b>14.2. Proper Shipping Name</b>			
Not regulated	Not regulated	Not regulated	Not regulated
<b>14.3. Transport hazard class(es)</b>			
Not regulated	Not regulated	Not regulated	Not regulated
<b>14.4. Packing group</b>			
Not regulated	Not regulated	Not regulated	Not regulated
<b>14.5. Environmental hazards</b>			
Not regulated	Not regulated	Not regulated	Not regulated
No supplementary information available			

### 14.6. Transport in bulk

Not applicable

### 14.7. Special precautions for user

#### DOT

Not regulated

#### TDG

Not regulated

#### IMDG

Not regulated

#### IATA

Not regulated

### SECTION 15 Regulatory information

#### 15.1. Federal regulations

All components of this product are exempt or present and listed as Active on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory, except for:

Kaolin	CAS-No. 1332-58-7	15 – 25%
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This product or mixture is not known to contain a toxic chemical or chemicals in excess of the applicable de minimis concentration as specified in 40 CFR §372.38(a) subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

#### Ferric ammonium citrate (1185-57-5)

CERCLA RQ	1000 lb
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### Sodium phosphate dibasic (7558-79-4)

CERCLA RQ

5000 lb

### 15.2. International regulations

No additional information available

### 15.3. State regulations

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm

## SECTION 16 Other information

according to 29 CFR § 1910.1200, Hazard Communication Standard (HCS)

Revision date

: 6/9/2025

Issue date

: 12/17/2024

### Full text of hazard classes and H-statements

H302	Harmful if swallowed
H315	Causes skin irritation
H317	May cause an allergic skin reaction
H319	Causes serious eye irritation
H332	Harmful if inhaled
H335	May cause respiratory irritation
H401	Toxic to aquatic life
H411	Toxic to aquatic life with long lasting effects

Safety Data Sheet (SDS), USA

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.