

SAFETY DATA SHEET

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Trade name or designation of the mixture	MethylEasy™ DNA Bisulphite Modification Kit (ME001)
Registration number	-
Synonyms	None.
SDS number	ME001-1
Product code	ME001
Issue date	31-July-2014
Version number	02
Revision date	27-March-2016
Supersedes version	01

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

Identified uses	Research use only.
Uses advised against	None known.

1.3. Details of the supplier of the safety data sheet

Manufacturer

Company name	Genetic Signatures
Address	Level 9, Lowy Packer Building, 405 Liverpool St, Darlinghurst, NSW, 2010, Australia

Telephone number	+61 2 9870 7580
e-mail	info@geneticsignatures.com
Contact person	Dr John Melki

Supplier

Company name	Diagenode SA
Address	LIEGE SCIENCE PARK Rue Bois Saint-Jean 3 4102 Seraing Belgium
Telephone number	+32 (0)4 364 20 57
e-mail	info@geneticsignatures.com

1.4. Emergency telephone number	+32 70 245 245
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SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

The mixture has been assessed and/or tested for its physical, health and environmental hazards and the following classification applies.

Classification according to Directive 67/548/EEC or 1999/45/EC as amended

Classification	Xn;R22, Xi;R38-41, R31
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The full text for all R-phrases is displayed in section 16.

Classification according to Regulation (EC) No 1272/2008 as amended

Health hazards

Acute toxicity, oral	Category 4	H302 - Harmful if swallowed.
Skin corrosion/irritation	Category 2	H315 - Causes skin irritation.
Serious eye damage/eye irritation	Category 1	H318 - Causes serious eye damage.

Hazard summary

Physical hazards	Not classified for physical hazards.
Health hazards	Harmful if swallowed. Contact with acids liberates toxic gas. Irritating to skin. Risk of serious damage to eyes. Occupational exposure to the substance or mixture may cause adverse health effects.
Environmental hazards	Not classified for hazards to the environment.
Specific hazards	Repeated or prolonged inhalation exposure may cause asthma-like syndrome (RADS).

Main symptoms Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. May cause redness and pain. May cause an asthma-like shortness of breath.

2.2. Label elements

Label according to Regulation (EC) No. 1272/2008 as amended

Contains: Sodium disulphite

Hazard pictograms



Signal word Danger

Hazard statements
H302 - Harmful if swallowed.
H315 - Causes skin irritation.
H318 - Causes serious eye damage.

Precautionary statements

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

Response
P301 + P312 - IF SWALLOWED: Call a POISON CENTRE or doctor/physician if you feel unwell.
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310 - Immediately call a POISON CENTRE or doctor/physician.

Storage Store away from incompatible materials.

Disposal P501 - Dispose of contents/container in accordance with local/regional/national/international regulations.

Supplemental label information EUH031 - Contact with acids liberates toxic gas.

2.3. Other hazards None known.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

General information

Chemical name	%	CAS-No. / EC No.	REACH Registration No.	INDEX No.	Notes
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Sodium disulphite	<100	7681-57-4 231-673-0	-	016-063-00-2	
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Classification: **DSD:** Xn;R22, Xi;R41, R31
CLP: Acute Tox. 4;H302, Eye Dam. 1;H318

Sodium hydroxide	1 - <2	1310-73-2 215-185-5	-	011-002-00-6	
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Classification: **DSD:** C;R35
CLP: Skin Corr. 1A;H314

CLP: Regulation No. 1272/2008.
DSD: Directive 67/548/EEC.

Composition comments The full text for all R- and H-phrases is displayed in section 16.

SECTION 4: First aid measures

General information

In the case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

4.1. Description of first aid measures

Inhalation Move to fresh air. For breathing difficulties, oxygen may be necessary. Get medical attention.

Skin contact Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash before reuse.

Eye contact Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention immediately.

Ingestion Rinse mouth. If swallowed, seek medical advice immediately and show this container or label. Never give anything by mouth to a victim who is unconscious or is having convulsions. Do not induce vomiting without advice from poison control center. Do not use mouth-to-mouth method if victim ingested the substance.

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

Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. Skin irritation. May cause redness and pain. May cause an asthma-like shortness of breath.

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

Provide general supportive measures and treat symptomatically. In case of shortness of breath, give oxygen. Keep victim warm. Keep victim under observation. Symptoms may be delayed.

SECTION 5: Firefighting measures

General fire hazards

No unusual fire or explosion hazards noted.

5.1. Extinguishing media

Suitable extinguishing media

Water fog. Foam. Dry chemical powder. Carbon dioxide (CO₂).

Unsuitable extinguishing media

Do not use water jet as an extinguisher, as this will spread the fire.

5.2. Special hazards arising from the substance or mixture

During fire, gases hazardous to health may be formed.

5.3. Advice for firefighters

Special protective equipment for firefighters

Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Special fire fighting procedures

Move containers from fire area if you can do so without risk.

Specific methods

Use standard firefighting procedures and consider the hazards of other involved materials.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Keep unnecessary personnel away. Wear appropriate protective equipment and clothing during clean-up. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation.

For emergency responders

Keep unnecessary personnel away. Use personal protection recommended in section 8 of the SDS.

6.2. Environmental precautions

Avoid discharge into drains, water courses or onto the ground.

6.3. Methods and material for containment and cleaning up

Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

6.4. Reference to other sections

For personal protection, see section 8. For waste disposal, see section 13 of the SDS.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Do not get this material in contact with eyes. Do not taste or swallow. Avoid contact with skin. Avoid prolonged exposure. Provide adequate ventilation. Wear appropriate personal protective equipment. When using, do not eat, drink or smoke. Observe good laboratory hygiene practices. Avoid release to the environment.

7.2. Conditions for safe storage, including any incompatibilities

Store in original tightly closed container. Store away from incompatible materials (see section 10 of the SDS).

7.3. Specific end use(s)

Research use only.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits

Austria. MAK List

Components	Type	Value	Form
Sodium hydroxide (CAS 1310-73-2)	Ceiling	4 mg/m ³	Inhalable fraction.
	MAK	2 mg/m ³	Inhalable fraction.

Belgium. Exposure Limit Values.

Components	Type	Value
Sodium disulphite (CAS 7681-57-4)	TWA	5 mg/m ³
Sodium hydroxide (CAS 1310-73-2)	TWA	2 mg/m ³

Bulgaria. OELs. Regulation No 13 on protection of workers against risks of exposure to chemical agents at work

Components	Type	Value	Form
Sodium hydroxide (CAS 1310-73-2)	TWA	2 mg/m ³	Aerosol

Croatia. Dangerous Substance Exposure Limit Values in the Workplace (ELVs), Annexes 1 and 2, Narodne Novine, 13/09

Components	Type	Value
Sodium disulphite (CAS 7681-57-4)	MAC	5 mg/m ³
Sodium hydroxide (CAS 1310-73-2)	STEL	2 mg/m ³

Cyprus. OELs. Control of factory atmosphere and dangerous substances in factories regulation, PI 311/73, as amended.

Components	Type	Value
Sodium hydroxide (CAS 1310-73-2)	TWA	2 mg/m ³

Czech Republic. OELs. Government Decree 361

Components	Type	Value
Sodium hydroxide (CAS 1310-73-2)	Ceiling	2 mg/m ³
	TWA	1 mg/m ³

Denmark. Exposure Limit Values

Components	Type	Value
Sodium disulphite (CAS 7681-57-4)	TLV	5 mg/m ³
Sodium hydroxide (CAS 1310-73-2)	Ceiling	2 mg/m ³

Estonia. OELs. Occupational Exposure Limits of Hazardous Substances. (Annex of Regulation No. 293 of 18 September 2001)

Components	Type	Value
Sodium hydroxide (CAS 1310-73-2)	TWA	1 mg/m ³

Finland. Workplace Exposure Limits

Components	Type	Value
Sodium hydroxide (CAS 1310-73-2)	Ceiling	2 mg/m ³

France. Threshold Limit Values (VLEP) for Occupational Exposure to Chemicals in France, INRS ED 984

Components	Type	Value
Sodium disulphite (CAS 7681-57-4)	VME	5 mg/m ³
Sodium hydroxide (CAS 1310-73-2)	VME	2 mg/m ³

Greece. OELs (Decree No. 90/1999, as amended)

Components	Type	Value
Sodium disulphite (CAS 7681-57-4)	TWA	5 mg/m ³
Sodium hydroxide (CAS 1310-73-2)	STEL	2 mg/m ³
	TWA	2 mg/m ³

Hungary. OELs. Joint Decree on Chemical Safety of Workplaces

Components	Type	Value
Sodium hydroxide (CAS 1310-73-2)	STEL	2 mg/m ³
	TWA	2 mg/m ³

Iceland. OELs. Regulation 154/1999 on occupational exposure limits

Components	Type	Value
Sodium disulphite (CAS 7681-57-4)	TWA	5 mg/m ³
Sodium hydroxide (CAS 1310-73-2)	STEL	2 mg/m ³

Ireland. Occupational Exposure Limits

Components	Type	Value
Sodium disulphite (CAS 7681-57-4)	TWA	5 mg/m ³
Sodium hydroxide (CAS 1310-73-2)	STEL	2 mg/m ³

Italy. OELs

Components	Type	Value
Sodium disulphite (CAS 7681-57-4)	TWA	5 mg/m ³
Sodium hydroxide (CAS 1310-73-2)	Ceiling	2 mg/m ³

Latvia. OELs. Occupational exposure limit values of chemical substances in work environment

Components	Type	Value
Sodium hydroxide (CAS 1310-73-2)	TWA	0,5 mg/m ³

Lithuania. OELs. Limit Values for Chemical Substances, General Requirements (Hygiene Norm HN 23:2007)

Components	Type	Value
Sodium hydroxide (CAS 1310-73-2)	Ceiling	2 mg/m ³

Norway. Administrative Norms for Contaminants in the Workplace

Components	Type	Value
Sodium disulphite (CAS 7681-57-4)	TLV	5 mg/m ³
Sodium hydroxide (CAS 1310-73-2)	Ceiling	2 mg/m ³

Poland. MACs. Minister of Labour and Social Policy Regarding Maximum Allowable Concentrations and Intensities in Working Environment

Components	Type	Value
Sodium hydroxide (CAS 1310-73-2)	STEL	1 mg/m ³
	TWA	0,5 mg/m ³

Portugal. VLEs. Norm on occupational exposure to chemical agents (NP 1796)

Components	Type	Value
Sodium disulphite (CAS 7681-57-4)	TWA	5 mg/m ³
Sodium hydroxide (CAS 1310-73-2)	Ceiling	2 mg/m ³

Romania. OELs. Protection of workers from exposure to chemical agents at the workplace

Components	Type	Value
Sodium hydroxide (CAS 1310-73-2)	STEL	3 mg/m ³
	TWA	1 mg/m ³

Slovakia. OELs. Decree of the government of the Slovak Republic concerning protection of health in work with chemical agents

Components	Type	Value
Sodium hydroxide (CAS 1310-73-2)	TWA	2 mg/m ³

Slovenia. OELs. Regulations concerning protection of workers against risks due to exposure to chemicals while working (Official Gazette of the Republic of Slovenia)

Components	Type	Value	Form
Sodium hydroxide (CAS 1310-73-2)	TWA	2 mg/m ³	Inhalable fraction.

Spain. Occupational Exposure Limits

Components	Type	Value
Sodium disulphite (CAS 7681-57-4)	TWA	5 mg/m ³
Sodium hydroxide (CAS 1310-73-2)	STEL	2 mg/m ³

Sweden. Occupational Exposure Limit Values

Components	Type	Value	Form
Sodium hydroxide (CAS 1310-73-2)	Ceiling	2 mg/m ³	Inhalable dust.
	TWA	1 mg/m ³	Inhalable dust.

Switzerland. SUVA Grenzwerte am Arbeitsplatz

Components	Type	Value	Form
Sodium disulphite (CAS 7681-57-4)	TWA	5 mg/m ³	Inhalable dust.
Sodium hydroxide (CAS 1310-73-2)	STEL	2 mg/m ³	Inhalable dust.
	TWA	2 mg/m ³	Inhalable dust.

UK. EH40 Workplace Exposure Limits (WELs)

Components	Type	Value
Sodium disulphite (CAS 7681-57-4)	TWA	5 mg/m ³
Sodium hydroxide (CAS 1310-73-2)	STEL	2 mg/m ³

Biological limit values No biological exposure limits noted for the ingredient(s).

Recommended monitoring procedures Follow standard monitoring procedures.

Derived no-effect level (DNEL) Not available.

Predicted no effect concentrations (PNECs) Not available.

8.2. Exposure controls

Appropriate engineering controls Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Eye wash facilities and emergency shower must be available when handling this product.

Individual protection measures, such as personal protective equipment

General information Use personal protective equipment as required. Personal protection equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment.

Eye/face protection Wear approved chemical safety goggles.

Skin protection

- Hand protection Risk of contact: Wear appropriate chemical resistant gloves.

- Other Wear appropriate chemical resistant clothing.

Respiratory protection In case of insufficient ventilation, wear suitable respiratory equipment.

Thermal hazards Wear appropriate thermal protective clothing, when necessary.

Hygiene measures When using, do not eat, drink or smoke. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

Environmental exposure controls Environmental manager must be informed of all major releases.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance

Physical state	Solid, Liquid.
Form	Varies by kit component. Solid. Liquid.
Colour	Varies by kit component. Colourless. White.

Odour Odourless.

Odour threshold Not available.

pH Not applicable.

Melting point/freezing point Not applicable.

Initial boiling point and boiling range Not applicable.

Flash point Not applicable.

Evaporation rate Not applicable.

Flammability (solid, gas) Not applicable.

Upper/lower flammability or explosive limits

Flammability limit - lower (%) Not applicable.

Flammability limit - upper (%) Not applicable.

Vapour pressure Not applicable.

Vapour density Not applicable.

Relative density Not applicable.

Solubility(ies) Not applicable.

Partition coefficient (n-octanol/water) No data available.

Auto-ignition temperature Not applicable.

Decomposition temperature Not applicable.

Viscosity Not applicable.

Explosive properties Not available.

Oxidizing properties Not available.

9.2. Other information

Bulk density Not applicable.

VOC (Weight %) Not applicable.

SECTION 10: Stability and reactivity

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

10.2. Chemical stability Material is stable under normal conditions.

10.3. Possibility of hazardous reactions No dangerous reaction known under conditions of normal use.

10.4. Conditions to avoid Reacts violently with strong acids. This product may react with oxidizing agents. Contact with incompatible materials.

10.5. Incompatible materials Acids. Oxidizing agents.

10.6. Hazardous decomposition products Sulphur oxides. Hydrogen sulfide.

SECTION 11: Toxicological information

General information Occupational exposure to the substance or mixture may cause adverse effects.

Information on likely routes of exposure

Ingestion Harmful if swallowed.

Inhalation Prolonged inhalation may be harmful. Repeated or prolonged inhalation exposure may cause asthma-like syndrome (RADS).

Skin contact Causes skin irritation.

Eye contact Causes serious eye damage.

Symptoms Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. Skin irritation. May cause redness and pain. May cause an asthma-like shortness of breath.

11.1. Information on toxicological effects

Acute toxicity Harmful if swallowed.

Components	Species	Test results
Sodium disulphite (CAS 7681-57-4)		
Acute		
<i>Other</i>		
LD50	Rat	115 mg/kg
Skin corrosion/irritation	Causes skin irritation.	
Serious eye damage/eye irritation	Causes serious eye damage.	
Respiratory sensitisation	Repeated or prolonged inhalation exposure may cause asthma-like syndrome.	
Skin sensitisation	This product is not expected to cause skin sensitisation.	
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.	
Carcinogenicity	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.	
IARC Monographs. Overall Evaluation of Carcinogenicity		
Sodium disulphite (CAS 7681-57-4)		3 Not classifiable as to carcinogenicity to humans.
Reproductive toxicity	This product is not expected to cause reproductive or developmental effects.	
Specific target organ toxicity - single exposure	No data available.	
Specific target organ toxicity - repeated exposure	No data available.	
Aspiration hazard	Not classified.	
Mixture versus substance information	Not available.	
Other information	None known.	

SECTION 12: Ecological information

12.1. Toxicity The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Components	Species	Test results
Sodium hydroxide (CAS 1310-73-2)		
Aquatic		
Crustacea	EC50	Water flea (Ceriodaphnia dubia) 34,59 - 47,13 mg/l, 48 hours
Fish	LC50	Bluegill (Lepomis macrochirus) 99 mg/l, 48 hours
		Western mosquitofish (Gambusia affinis) 125 mg/l, 96 hours
12.2. Persistence and degradability	No data is available on the degradability of this product.	
12.3. Bioaccumulative potential	No data available.	
Partition coefficient n-octanol/water (log Kow)	No data available.	
Bioconcentration factor (BCF)	Not available.	
12.4. Mobility in soil	No data available.	
12.5. Results of PBT and vPvB assessment	Not a PBT or vPvB substance or mixture.	
12.6. Other adverse effects	None known.	

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Residual waste Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

Contaminated packaging	Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.
EU waste code	16 05 06* The Waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Disposal methods/information	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. This material and its container must be disposed of as hazardous waste. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.

SECTION 14: Transport information

ADR

Not regulated as dangerous goods.

RID

Not regulated as dangerous goods.

ADN

Not regulated as dangerous goods.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable.

SECTION 15: Regulatory information

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

EU regulations

Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex I

Not listed.

Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex II

Not listed.

Regulation (EC) No. 850/2004 On persistent organic pollutants, Annex I as amended

Not listed.

Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex I, part 1 as amended

Not listed.

Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex I, part 2 as amended

Not listed.

Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex I, part 3 as amended

Not listed.

Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex V as amended

Not listed.

Regulation (EC) No. 166/2006 Annex II Pollutant Release and Transfer Registry

Not listed.

Regulation (EC) No. 1907/2006, REACH Article 59(10) Candidate List as currently published by ECHA

Not listed.

Authorisations

Regulation (EC) No. 1907/2006, REACH Annex XIV Substances subject to authorization, as amended

Not listed.

Restrictions on use

Regulation (EC) No. 1907/2006, REACH Annex XVII Substances subject to restriction on marketing and use as amended

Not listed.

Directive 2004/37/EC: on the protection of workers from the risks related to exposure to carcinogens and mutagens at work

Not listed.

Directive 92/85/EEC: on the safety and health of pregnant workers and workers who have recently given birth or are breastfeeding

Not listed.

Other EU regulations

Directive 96/82/EC (Seveso II) on the control of major-accident hazards involving dangerous substances

Not listed.

Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work

Sodium disulphite (CAS 7681-57-4)

Sodium hydroxide (CAS 1310-73-2)

Directive 94/33/EC on the protection of young people at work

Sodium hydroxide (CAS 1310-73-2)

Other regulations

The product is classified and labelled in accordance with EC directives or respective national laws. This Safety Data Sheet complies with the requirements of Regulation (EC) No 1907/2006.

National regulations

Young people under 18 years old are not allowed to work with this product according to the EU Directive 94/33/EC on the protection of young people at work. Follow national regulation for work with chemical agents.

15.2. Chemical safety assessment

No Chemical Safety Assessment has been carried out.

SECTION 16: Other information

List of abbreviations

LD50: Lethal Dose, 50%.
LC50: Lethal Concentration, 50%.
EC50: Effective concentration, 50%.
CLP: Regulation No. 1272/2008.
DSD: Directive 67/548/EEC.

References

IARC Monographs. Overall Evaluation of Carcinogenicity
ESIS (European chemical Substances Information System)

Information on evaluation method leading to the classification of mixture

The classification for health and environmental hazards is derived by a combination of calculation methods and test data, if available.

Full text of any statements or R-phrases and H-statements under Sections 2 to 15

R22 Harmful if swallowed.
R31 Contact with acids liberates toxic gas.
R35 Causes severe burns.
R38 Irritating to skin.
R41 Risk of serious damage to eyes.
H302 Harmful if swallowed.
H314 Causes severe skin burns and eye damage.
H318 Causes serious eye damage.

Training information

Follow training instructions when handling this material.

Disclaimer

The information in the sheet was written based on the best knowledge and experience currently available.