

Tagmentation Buffer (2x)

version number: GHS 1.0

date of compilation: 2021-02-08

SECTION 1: Identification

1.1 product identifier

trade name **Tagmentation Buffer (2x)**
product code(s) C01019043

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

relevant identified uses for research use only, not for use in diagnostic or therapeutic procedures.

1.3 details of the supplier of the safety data sheet

Diagenode SA
LIEGE SCIENCE PARK Rue du Bois Saint-Jean, 3
4102 Seraing
Belgium

telephone: +32 4 364 20 50

1.4 emergency telephone number

emergency information service +32 4 364 20 50
this number is only available during the following of-
fice hours: Mon-Fri 09:00 AM - 05:00 PM

poison center		
country	name	telephone
United States	American Association of Poison Control Centers	1-800-222-1222

SECTION 2: Hazard(s) identification

2.1 classification of the substance or mixture

classification acc. to OSHA "Hazard Communication Standard" (29 CFR 1910.1200)

section	hazard class	category	hazard class and category	hazard statement
A.3	serious eye damage/eye irritation	2	Eye Irrit. 2	H319
A.6	carcinogenicity	1B	Carc. 1B	H350
A.7	reproductive toxicity	1B	Repr. 1B	H360D
B.6	flammable liquid	3	Flam. Liq. 3	H226

for full text of abbreviations: see SECTION 16.

the most important adverse physicochemical, human health and environmental effects
the product is combustible and can be ignited by potential ignition sources.

2.2 label elements

labelling acc. to OSHA "Hazard Communication Standard" (29 CFR 1910.1200)

- signal word danger

- pictograms

GHS02, GHS07, GHS08



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- hazard statements

H226	flammable liquid and vapor.
H319	causes serious eye irritation.
H350	may cause cancer.
H360D	may damage the unborn child.

- precautionary statements

P202	do not handle until all safety precautions have been read and understood.
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/eye protection/face protection.
P303+P361+P353	if on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P305+P351+P338	if in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P313	if exposed or concerned: Get medical advice/attention.
P337+P313	if eye irritation persists: Get medical advice/attention.
P370+P378	in case of fire: Use sand, carbon dioxide or powder extinguisher to extinguish.
P403+P235	store in a well-ventilated place. Keep cool.
P405	store locked up.
P501	dispose of contents/container to industrial combustion plant.

- hazardous ingredients for labelling N,N-dimethylformamide

2.3 other hazards

hazards not otherwise classified

may be harmful if inhaled (GHS category 5: acutely toxic - inhalation).

SECTION 3: Composition/information on ingredients

3.1 substances

not relevant (mixture)

3.2 mixtures

description of the mixture

name of substance	identifier	wt%	classification acc. to GHS	pictograms
N,N-dimethylformamide	CAS No 68-12-2	≤ 20	Acute Tox. 4 / H312 Acute Tox. 3 / H331 Eye Irrit. 2 / H319 Carc. 1B / H350 Repr. 1B / H360D Flam. Liq. 3 / H226	

for full text of abbreviations: see SECTION 16.

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SECTION 4: First-aid measures

4.1 description of first-aid measures

general notes

do not leave affected person unattended. remove victim out of the danger area. keep affected person warm, still and covered. take off immediately all contaminated clothing. in all cases of doubt, or when symptoms persist, seek medical advice. in case of unconsciousness place person in the recovery position. Never give anything by mouth.

following inhalation

if breathing is irregular or stopped, immediately seek medical assistance and start first aid actions. provide fresh air.

following skin contact

wash with plenty of soap and water.

following eye contact

remove contact lenses, if present and easy to do. Continue rinsing. irrigate copiously with clean, fresh water for at least 10 minutes, holding the eyelids apart.

following ingestion

rinse mouth with water (only if the person is conscious). do NOT induce vomiting.

4.2 most important symptoms and effects, both acute and delayed

symptoms and effects are not known to date.

4.3 indication of any immediate medical attention and special treatment needed

none

SECTION 5: Fire-fighting measures

5.1 extinguishing media

suitable extinguishing media

water spray, BC-powder, carbon dioxide (CO₂)

unsuitable extinguishing media

water jet

5.2 special hazards arising from the substance or mixture

in case of insufficient ventilation and/or in use, may form flammable/explosive vapor-air mixture. solvent vapors are heavier than air and may spread along floors. places which are not ventilated, e.g. unventilated below ground level areas such as trenches, conduits and shafts, are particularly prone to the presence of flammable substances or mixtures.

hazardous combustion products

nitrogen oxides (NO_x), carbon monoxide (CO), carbon dioxide (CO₂)

5.3 advice for firefighters

in case of fire and/or explosion do not breathe fumes. coordinate firefighting measures to the fire surroundings. do not allow firefighting water to enter drains or water courses. collect contaminated firefighting water separately. fight fire with normal precautions from a reasonable distance.

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SECTION 6: Accidental release measures

6.1 personal precautions, protective equipment and emergency procedures

for non-emergency personnel

remove persons to safety.

for emergency responders

wear breathing apparatus if exposed to vapors/dust/aerosols/gases.

6.2 environmental precautions

keep away from drains, surface and ground water. retain contaminated washing water and dispose of it.

6.3 methods and material for containment and cleaning up

advice on how to contain a spill

covering of drains

advice on how to clean up a spill

wipe up with absorbent material (e.g. cloth, fleece). collect spillage: sawdust, kieselgur (diatomite), sand, universal binder

appropriate containment techniques

use of adsorbent materials.

other information relating to spills and releases

place in appropriate containers for disposal. ventilate affected area.

6.4 reference to other sections

hazardous combustion products: see section 5. personal protective equipment: see section 8. incompatible materials: see section 10. disposal considerations: see section 13.

SECTION 7: Handling and storage

7.1 precautions for safe handling

recommendations

- measures to prevent fire as well as aerosol and dust generation

use local and general ventilation. avoidance of ignition sources. keep away from sources of ignition - No smoking. take precautionary measures against static discharge. use only in well-ventilated areas. due to danger of explosion, prevent leakage of vapours into cellars, flues and ditches. ground/bond container and receiving equipment. use explosion-proof electrical/ventilating/lighting/equipment. use only non-sparking tools.

- specific notes/details

places which are not ventilated, e.g. unventilated below ground level areas such as trenches, conduits and shafts, are particularly prone to the presence of flammable substances or mixtures. vapors are heavier than air, spread along floors and form explosive mixtures with air. vapors may form explosive mixtures with air.

advice on general occupational hygiene

wash hands after use. do not eat, drink and smoke in work areas. remove contaminated clothing and protective equipment before entering eating areas. never keep food or drink in the vicinity of chemicals. never place chemicals in containers that are normally used for food or drink. keep away from food, drink and animal feedingstuffs.

7.2 conditions for safe storage, including any incompatibilities

managing of associated risks

- explosive atmospheres

keep container tightly closed and in a well-ventilated place. use local and general ventilation. keep cool. protect from sunlight.

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- flammability hazards

keep away from sources of ignition - No smoking. keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. take precautionary measures against static discharge. protect from sunlight.

control of the effects

protect against external exposure, such as

frost

- ventilation requirements

use local and general ventilation. ground/bond container and receiving equipment.

- packaging compatibilities

only packagings which are approved (e.g. acc. to the Dangerous Goods Regulations) may be used.

7.3 specific end use(s)

see section 16 for a general overview.

SECTION 8: Exposure controls/personal protection

8.1 control parameters

occupational exposure limit values (Workplace Exposure Limits)											
country	name of agent	CAS No	identifier	TWA [ppm]	TWA [mg/m ³]	STEL [ppm]	STEL [mg/m ³]	Ceiling-C [ppm]	Ceiling-C [mg/m ³]	notation	source
US	dimethyl formamide	68-12-2	REL	10 (10 h)	30 (10 h)						NIOSH REL
US	dimethyl formamide	68-12-2	TLV®	5							ACGIH® 2019
US	dimethyl formamide	68-12-2	PEL	10	30						29 CFR 1910.1000
US	dimethyl formamide (DMF)	68-12-2	PEL (CA)	10	30						Ca/ OSHA PEL

notation

Ceiling-C
STEL

ceiling value is a limit value above which exposure should not occur

short-term exposure limit: a limit value above which exposure should not occur and which is related to a 15-minute period (unless otherwise specified)

TWA

time-weighted average (long-term exposure limit): measured or calculated in relation to a reference period of 8 hours time-weighted average (unless otherwise specified)

biological limit values						
country	name of agent	parameter	notation	identifier	value	source
US	N,N-dimethylformamide (dimethyl formamide)	N-acetyl-S-(N-methylcarbamoyl)-cysteine		BEI®	30 mg/l	ACGIH® 2019
US	N,N-dimethylformamide (dimethyl formamide)	N-methylformamide		BEI®	30 mg/l	ACGIH® 2019

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relevant DNELs of components of the mixture						
name of substance	CAS No	endpoint	threshold level	protection goal, route of exposure	used in	exposure time
N,N-dimethylformamide	68-12-2	DNEL	15 mg/m ³	human, inhalatory	worker (industry)	chronic - systemic effects
N,N-dimethylformamide	68-12-2	DNEL	30 mg/m ³	human, inhalatory	worker (industry)	acute - systemic effects
N,N-dimethylformamide	68-12-2	DNEL	15 mg/m ³	human, inhalatory	worker (industry)	chronic - local effects
N,N-dimethylformamide	68-12-2	DNEL	30 mg/m ³	human, inhalatory	worker (industry)	acute - local effects
N,N-dimethylformamide	68-12-2	DNEL	3.31 mg/kg bw/day	human, dermal	worker (industry)	chronic - systemic effects
N,N-dimethylformamide	68-12-2	DNEL	26.3 mg/kg bw/day	human, dermal	worker (industry)	acute - systemic effects
N,N-dimethylformamide	68-12-2	DNEL	446 µg/cm ²	human, dermal	worker (industry)	chronic - local effects
N,N-dimethylformamide	68-12-2	DNEL	5,900 µg/cm ²	human, dermal	worker (industry)	acute - local effects

relevant PNECs of components of the mixture						
name of substance	CAS No	endpoint	threshold level	organism	environmental compartment	exposure time
N,N-dimethylformamide	68-12-2	PNEC	30 mg/l	aquatic organisms	freshwater	short-term (single instance)
N,N-dimethylformamide	68-12-2	PNEC	3 mg/l	aquatic organisms	marine water	short-term (single instance)
N,N-dimethylformamide	68-12-2	PNEC	123 mg/l	aquatic organisms	sewage treatment plant (STP)	short-term (single instance)
N,N-dimethylformamide	68-12-2	PNEC	115.2 mg/kg	aquatic organisms	freshwater sediment	short-term (single instance)
N,N-dimethylformamide	68-12-2	PNEC	11.52 mg/kg	aquatic organisms	marine sediment	short-term (single instance)
N,N-dimethylformamide	68-12-2	PNEC	56.97 mg/kg	terrestrial organisms	soil	short-term (single instance)

8.2 exposure controls

appropriate engineering controls
general ventilation.

individual protection measures (personal protective equipment)

eye/face protection
wear eye/face protection.

skin protection

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- hand protection

wear suitable gloves. chemical protection gloves are suitable, which are tested according to EN 374. check leak-tightness/impermeability prior to use. in the case of wanting to use the gloves again, clean them before taking off and air them well. for special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

- other protection measures

take recovery periods for skin regeneration. preventive skin protection (barrier creams/ointments) is recommended. wash hands thoroughly after handling.

respiratory protection

in case of inadequate ventilation wear respiratory protection.

environmental exposure controls

use appropriate container to avoid environmental contamination. keep away from drains, surface and ground water.

SECTION 9: Physical and chemical properties

9.1 information on basic physical and chemical properties

appearance

physical state	liquid
color	colorless
odor	characteristic

other safety parameters

pH (value)	not determined
melting point/freezing point	not determined
initial boiling point and boiling range	not determined
flash point	not determined
evaporation rate	not determined
flammability (solid, gas)	not relevant, (fluid)
vapor pressure	not determined
density	not determined
vapor density	this information is not available
relative density	information on this property is not available
solubility(ies)	not determined

partition coefficient

- n-octanol/water (log KOW)	this information is not available
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auto-ignition temperature	not determined
viscosity	not determined
explosive properties	none
oxidizing properties	none
9.2 other information	there is no additional information

SECTION 10: Stability and reactivity

10.1 reactivity

concerning incompatibility: see below "Conditions to avoid" and "Incompatible materials". the mixture contains reactive substance(s). risk of ignition.

if heated:

risk of ignition

10.2 chemical stability

see below "Conditions to avoid".

10.3 possibility of hazardous reactions

no known hazardous reactions.

10.4 conditions to avoid

keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

hints to prevent fire or explosion

use explosion-proof electrical/ventilating/lighting/equipment. use only non-sparking tools. take precautionary measures against static discharge.

10.5 incompatible materials

oxidizers

10.6 hazardous decomposition products

reasonably anticipated hazardous decomposition products produced as a result of use, storage, spill and heating are not known. hazardous combustion products: see section 5.

SECTION 11: Toxicological information

11.1 information on toxicological effects

test data are not available for the complete mixture.

classification procedure

the method for classification of the mixture is based on ingredients of the mixture (additivity formula).

classification acc. to OSHA "Hazard Communication Standard" (29 CFR 1910.1200)

acute toxicity

shall not be classified as acutely toxic.

GHS of the United Nations, annex 4: may be harmful if inhaled.

skin corrosion/irritation

shall not be classified as corrosive/irritant to skin.

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serious eye damage/eye irritation

causes serious eye irritation.

respiratory or skin sensitization

shall not be classified as a respiratory or skin sensitizer.

germ cell mutagenicity

shall not be classified as germ cell mutagenic.

carcinogenicity

may cause cancer.

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans			
name of substance	CAS No	classification	number
N,N-dimethylformamide	68-12-2	2A	

Legend

2A Probably carcinogenic to humans

reproductive toxicity

may damage the unborn child.

specific target organ toxicity - single exposure

shall not be classified as a specific target organ toxicant (single exposure).

specific target organ toxicity - repeated exposure

shall not be classified as a specific target organ toxicant (repeated exposure).

aspiration hazard

shall not be classified as presenting an aspiration hazard.

SECTION 12: Ecological information

12.1 toxicity

shall not be classified as hazardous to the aquatic environment.

12.2 persistence and degradability

data are not available.

12.3 bioaccumulative potential

data are not available.

12.4 mobility in soil

data are not available.

12.5 results of PBT and vPvB assessment

data are not available.

12.6 endocrine disrupting properties

information on this property is not available.

12.7 other adverse effects

data are not available.

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SECTION 13: Disposal considerations

13.1 waste treatment methods

waste treatment-relevant information

solvent reclamation/regeneration.

sewage disposal-relevant information

do not empty into drains. avoid release to the environment. Refer to special instructions/safety data sheets.

waste treatment of containers/packages

only packagings which are approved (e.g. acc. to DOT) may be used. completely emptied packages can be recycled. handle contaminated packages in the same way as the substance itself.

remarks

please consider the relevant national or regional provisions. waste shall be separated into the categories that can be handled separately by the local or national waste management facilities.

SECTION 14: Transport information

14.1 UN number

DOT	UN 1993
IMDG-Code	UN 1993
ICAO-TI	UN 1993

14.2 UN proper shipping name

DOT	Flammable liquid, n.o.s.
IMDG-Code	FLAMMABLE LIQUID, N.O.S.
ICAO-TI	Flammable liquid, n.o.s.
technical name (hazardous ingredients)	N,N-dimethylformamide

14.3 transport hazard class(es)

DOT	3
IMDG-Code	3
ICAO-TI	3

14.4 packing group

DOT	III
IMDG-Code	III
ICAO-TI	III

14.5 environmental hazards

non-environmentally hazardous acc. to the dangerous goods regulations

14.6 special precautions for user

there is no additional information.

14.7 transport in bulk according to Annex II of MARPOL and the IBC Code

the cargo is not intended to be carried in bulk.

Information for each of the UN Model Regulations

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transport of dangerous goods by road or rail (49 CFR US DOT) - additional information

particulars in the shipper's declaration UN1993, Flammable liquid, n.o.s., (contains: N,N-dimethylformamide), 3, III
 danger label(s) 3



special provisions (SP) B1, B52, IB3, T4, TP1, TP29
 ERG No 128

International Maritime Dangerous Goods Code (IMDG) - additional information

marine pollutant -
 danger label(s) 3



special provisions (SP) 223, 274, 955
 excepted quantities (EQ) E1
 limited quantities (LQ) 5 L
 EmS F-E, S-E
 stowage category A

International Civil Aviation Organization (ICAO-IATA/DGR) - additional information

danger label(s) 3



special provisions (SP) A3
 excepted quantities (EQ) E1
 limited quantities (LQ) 10 L

SECTION 15: Regulatory information

15.1 safety, health and environmental regulations specific for the product in question

industry or sector specific available guidance(s)

NPCA-HMIS® III

Hazardous Materials Identification System. American Coatings Association.

category	rating	description
Chronic	*	chronic (long-term) health effects may result from repeated overexposure
Health	2	temporary or minor injury may occur
Flammability	2	material that must be moderately heated or exposed to relatively high ambient temperatures before ignition can occur
Physical hazard	0	material that is normally stable, even under fire conditions, and will not react with water, polymerize, decompose, condense, or self-react. Non-explosive
Personal protection	-	

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NFPA® 704

National Fire Protection Association: Standard System for the Identification of the Hazards of Materials for Emergency Response (United States).

category	degree of hazard	description
Flammability	2	material that must be moderately heated or exposed to relatively high ambient temperatures before ignition can occur
Health	0	material that, under emergency conditions, would offer no hazard beyond that of ordinary combustible material
Instability	0	material that is normally stable, even under fire conditions
Special hazard		

15.2 Chemical Safety Assessment

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

SECTION 16: Other information, including date of preparation or last revision

abbreviations and acronyms

abbr.	descriptions of used abbreviations
29 CFR 1910.1000	29 CFR 1910.1000, Tables Z-1, Z-2, Z-3 - Occupational Safety and Health Standards: Toxic and Hazardous Substances (permissible exposure limits)
49 CFR US DOT	49 CFR U.S. Department of Transportation
ACGIH® 2019	From ACGIH®, 2019 TLVs® and BEIs® Book. Copyright 2019. Reprinted with permission. Information on the proper use of the TLVs® and BEIs®: http://www.acgih.org/tlv-bei-guidelines/policies-procedures-presentations/tlv-bei-position-statement
Acute Tox.	Acute toxicity
Cal/OSHA PEL	California Division of Occupational Safety and Health (Cal/OSHA): Permissible Exposure Limits (PELs)
Carc.	Carcinogenicity
CAS	Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)
Ceiling-C	Ceiling value
DGR	Dangerous Goods Regulations (see IATA/DGR)
DNEL	Derived No-Effect Level
DOT	Department of Transportation (USA)
EmS	Emergency Schedule
ERG No	Emergency Response Guidebook - Number
Eye Dam.	Seriously damaging to the eye
Eye Irrit.	Irritant to the eye
Flam. Liq.	Flammable liquid
GHS	"Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations
IATA	International Air Transport Association
IATA/DGR	Dangerous Goods Regulations (DGR) for the air transport (IATA)
ICAO	International Civil Aviation Organization

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abbr.	descriptions of used abbreviations
ICA0-TI	Technical instructions for the safe transport of dangerous goods by air
IMDG	International Maritime Dangerous Goods Code
IMDG-Code	International Maritime Dangerous Goods Code
MARPOL	International Convention for the Prevention of Pollution from Ships (abbr. of "Marine Pollutant")
NIOSH REL	National Institute for Occupational Safety and Health (NIOSH): Recommended Exposure Limits (RELs)
NPCA-HMIS® III	National Paint and Coatings Association: Hazardous Materials Identification System - HMIS® III, Third Edition
OSHA	Occupational Safety and Health Administration (United States)
PBT	Persistent, Bioaccumulative and Toxic
PEL	Permissible exposure limit
PNEC	Predicted No-Effect Concentration
ppm	Parts per million
Repr.	Reproductive toxicity
RTECS	Registry of Toxic Effects of Chemical Substances (database of NIOSH with toxicological information)
STEL	Short-term exposure limit
TLV®	Threshold Limit Values
TWA	Time-weighted average
vPvB	Very Persistent and very Bioaccumulative

key literature references and sources for data

OSHA Hazard Communication Standard (HCS), 29 CFR 1910.1200.

transport of dangerous goods by road or rail (49 CFR US DOT). International Maritime Dangerous Goods Code (IMDG). Dangerous Goods Regulations (DGR) for the air transport (IATA).

classification procedure

physical and chemical properties: the classification is based on tested mixture.

health hazards, environmental hazards: the method for classification of the mixture is based on ingredients of the mixture (additivity formula).

list of relevant phrases (code and full text as stated in chapter 2 and 3)

code	text
H226	Flammable liquid and vapor.
H312	Harmful in contact with skin.
H319	Causes serious eye irritation.
H331	Toxic if inhaled.
H350	May cause cancer.
H360D	May damage the unborn child.

disclaimer

this information is based upon the present state of our knowledge. this SDS has been compiled and is solely intended for this product.