Safety Data Sheet
acc. to OSHA HCS (HazCom 2012)

Printing date 12/06/2017 Reviewed on 12/06/2017

1 Identification

· **Product identifier**

· **Trade name:** **Digestion Reagent Total Nitrogen Tube Test**

· **Catalogue number:** 424408

· **Application of the substance / the mixture:** Reagent for water analysis

· **Manufacturer/Supplier:**
Tintometer Inc.
6456 Parkland Drive
Sarasota, FL 34243
USA
phone: (941) 756-6410
fax: (941) 727-9654
www.lovibond.us
Made in Germany

· **Emergency telephone number:** + 1 866 928 0789 (English, French, Spanish)

2 Hazard(s) identification

· **Classification of the substance or mixture**


GHS03 Flame over circle

Ox. Sol. 3 H272 May intensify fire; oxidizer.


GHS08 Health hazard

Resp. Sens. 1 H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.


GHS07

Acute Tox. 4 H302 Harmful if swallowed.
Skin Irrit. 2 H315 Causes skin irritation.
Eye Irrit. 2A H319 Causes serious eye irritation.
Skin Sens. 1 H317 May cause an allergic skin reaction.
STOT SE 3 H335 May cause respiratory irritation.

· **Label elements**
· **GHS label elements** The product is classified and labeled according to the Hazard Communication Standard (HCS).
· **Hazard pictograms**


GHS03 GHS07 GHS08

· **Signal word** Danger
· **Hazard-determining components of labeling:**
potassium persulphate
· **Hazard statements**
H272 May intensify fire; oxidizer.
H302 Harmful if swallowed.
H315 Causes skin irritation.
H319 Causes serious eye irritation.

(Contd. on page 2)

Safety Data Sheet
acc. to OSHA HCS (HazCom 2012)

Printing date 12/06/2017 Reviewed on 12/06/2017

Trade name: Digestion Reagent Total Nitrogen Tube Test

(Contd. of page 1)

H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H317 May cause an allergic skin reaction.
H335 May cause respiratory irritation.

· **Precautionary statements**

P210	Keep away from heat. - No smoking.
P280	Wear protective gloves/protective clothing/eye protection.
P302+P352	If on skin: Wash with plenty of water.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338	If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P313	Get medical advice/attention.

· **Other hazards** No further relevant information available.

*
3 Composition/information on ingredients

· **Chemical characterization: Mixtures**
· **Description:** Mixture of inorganic compounds.
· **Composition and Information on Ingredients:**
Percent ranges are used due to the confidential product information.

CAS: 7727-21-1 EINECS: 231-781-8 Index number: 016-061-00-1 RTECS: SE0400000	potassium persulphate Ox. Sol. 3, H272; Resp. Sens. 1, H334; Acute Tox. 4, H302; Skin Irrit. 2, H315; Eye Irrit. 2A, H319; Skin Sens. 1, H317; STOT SE 3, H335	60–70%
CAS: 497-19-8 EINECS: 207-838-8 Index number: 011-005-00-2	sodium carbonate Eye Irrit. 2A, H319	25–35%

· **Additional information:** For the wording of the listed hazard phrases refer to section 16.

4 First-aid measures

· **Description of first aid measures**
· **General information:** Immediately remove any clothing soiled by the product.
· **After inhalation:** Supply fresh air or oxygen; call for doctor.
· **After skin contact:**
Immediately rinse with plenty of water.
Seek medical advice.
· **After eye contact:** Rinse opened eye for several minutes (at least 15 min) under running water. Then consult a doctor.
· **After swallowing:**
Rinse out mouth and then drink 1-2 glasses of water.
Seek medical treatment.
· **Most important symptoms and effects, both acute and delayed**
allergic reactions
irritations
damage to the affected mucous membranes possible
after inhalation:
coughing
breathing difficulty
after swallowing:
gastric or intestinal disorders
diarrhoea
· **Danger:** Danger of pulmonary edema.
· **Indication of any immediate medical attention and special treatment needed:** No further relevant information available.

5 Fire-fighting measures

· **Extinguishing media**
· **Suitable extinguishing agents:** Use fire fighting measures that suit the environment.
· **Special hazards arising from the substance or mixture**
The product is not combustible.
Has a fire-promoting effect due to release of oxygen.

(Contd. on page 3)

Safety Data Sheet
acc. to OSHA HCS (HazCom 2012)

Printing date 12/06/2017 Reviewed on 12/06/2017

Trade name: Digestion Reagent Total Nitrogen Tube Test

(Contd. of page 2)

Formation of toxic gases is possible during heating or in case of fire.
In case of fire, the following can be released:
Sulfur oxides (SOx)
Potassium oxide
Sodium oxide
· **Advice for firefighters**
· **Protective equipment:**
Wear self-contained respiratory protective device.
Wear fully protective suit.
· **Additional information**
Collect contaminated fire fighting water separately. It must not enter the sewage system.
Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.
Ambient fire may liberate hazardous vapours.

6 Accidental release measures

· **Personal precautions, protective equipment and emergency procedures**
· **Advice for non-emergency personnel:**
Wear protective equipment. Keep unprotected persons away.
Avoid substance contact.
Ensure adequate ventilation
· **Advice for emergency responders:** Protective equipment: see section 8
· **Environmental precautions:** Do not allow product to reach sewage system or any water course.
· **Methods and material for containment and cleaning up:**
Ensure adequate ventilation.
Pick up mechanically.
Dispose contaminated material as waste according to item 13.
· **Reference to other sections**
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

7 Handling and storage

· **Handling:**
· **Precautions for safe handling**
· **Advice on safe handling:** Prevent formation of dust.
· **Hygiene measures:**
Do not inhale dust / smoke / mist.
Avoid contact with the skin.
Avoid contact with the eyes.
Take off immediately all contaminated clothing.
Wash hands before breaks and at the end of work.
Do not eat, drink or smoke when using this product.

· **Conditions for safe storage, including any incompatibilities**
· **Storage:**
· **Requirements to be met by storerooms and receptacles:**
Store in a cool location.
Protect from heat.
· **Information about storage in one common storage facility:** Store away from flammable substances.
· **Further information about storage conditions:**
Store in cool, dry conditions in well sealed receptacles.
Protect from heat and direct sunlight.
Protect from exposure to the light.
Protect from humidity and water.
· **Recommended storage temperature:** 20°C +/- 5°C (approx. 68°F)
· **Specific end use(s)** No further relevant information available.

(Contd. on page 4)

Safety Data Sheet
acc. to OSHA HCS (HazCom 2012)

Printing date 12/06/2017 Reviewed on 12/06/2017

Trade name: Digestion Reagent Total Nitrogen Tube Test

(Contd. of page 3)

8 Exposure controls/personal protection

· **Control parameters**

· **Components with limit values that require monitoring at the workplace:**	
CAS: 7727-21-1 potassium persulphate	
TLV (USA)	Long-term value: 0.1 mg/m³ as Persulfates
EL (Canada)	Long-term value: 0.1 mg/m³ as persulfate
EV (Canada)	Long-term value: 0.1 mg/m³

· **Additional information:** The lists that were valid during the creation were used as basis.

· **Engineering measures:**
Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.
See item 7.

· **Personal protective equipment:**
· **Breathing equipment:** Use respiratory protective device against the effects of fumes/dust/aerosol.
· **Recommended filter device for short term use:** Filter P2
· **Protection of hands:**
Protective gloves
Preventive skin protection by use of skin-protecting agents is recommended.
After use of gloves apply skin-cleaning agents and skin cosmetics.
· **Material of gloves**
Nitrile rubber, NBR
Recommended thickness of the material: ≥ 0.11 mm
· **Penetration time of glove material**
Value for the permeation: Level ≤ 1 (10 min)
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
· **Eye protection:** Tightly sealed goggles
· **Body protection:** Protective work clothing

· **Limitation and supervision of exposure into the environment:**
Do not allow product to reach sewage system or any water course.

9 Physical and chemical properties

· **Information on basic physical and chemical properties**	
· **Appearance:**	
Form / Physical state:	Powder
Color:	White
· **Odor:**	Odorless
· **Odor threshold:**	Not applicable.
· **pH-value (10 g/l) at 20 °C (68 °F):**	11,3
· **Melting point/freezing point:**	Not determined.
· **Initial boiling point and boiling range:**	Not determined.
· **Flash point:**	Not applicable.
· **Flammability (solid, gas):**	Contact with combustible material may cause fire.
· **Decomposition temperature:**	> 100 °C (>212 °F) (CAS 7727-21-1)
· **Auto-ignition temperature:**	Product is not self-igniting.
· **Danger of explosion:**	Product does not present an explosion hazard.
· **Flammability or explosive limits:**	
Lower:	Not applicable.
Upper:	Not applicable.
· **Oxidizing properties:**	May intensify fire; oxidizer.
· **Vapor Pressure:**	Not applicable.
· **Density at 20 °C (68 °F):**	2,5 g/cm³ (20.86 lbs/gal)

(Contd. on page 5)

Safety Data Sheet
acc. to OSHA HCS (HazCom 2012)

Printing date 12/06/2017 Reviewed on 12/06/2017

Trade name: Digestion Reagent Total Nitrogen Tube Test

(Contd. of page 4)

· **Relative density:**	Not determined.
· **Vapor density:**	Not applicable.
· **Evaporation rate:**	Not applicable.
· **Solubility(ies)**	
Water:	Soluble.
· **Partition coefficient (n-octanol/water):**	Not applicable.
· **Viscosity:**	Not applicable.
· **Solvent content:**	
Organic solvents:	0,0 %
· **Other information**	No further relevant information available.

10 Stability and reactivity

· **Reactivity** see section "Possibility of hazardous reactions"
· **Chemical stability** Stable at ambient temperature (room temperature).
· **Possibility of hazardous reactions**
Reacts with reducing agents.
Reacts with alkali (lyes).
· **Conditions to avoid** Strong heating (decomposition)
· **Incompatible materials:**
metals
aluminum
combustible materials
· **Hazardous decomposition products:**
oxygen
In case of fire: see section 5.

* 11 Toxicological information

· **Information on toxicological effects**
· **Acute toxicity:** Classification according to calculation procedure.

· **Acute toxicity estimate ($ATE_{(MIX)}$) - Calculation method:**		
Oral	GHS $ATE_{(MIX)}$	1020 mg/kg (.)

· **LD/LC50 values that are relevant for classification:**		
CAS: 7727-21-1 potassium persulphate		
Oral	LD50	802 mg/kg (rat) (RTECS)
Dermal	LD50	>10000 mg/kg (rabbit)
CAS: 497-19-8 sodium carbonate		
Oral	LD50	2800 mg/kg (rat) (Registrant, ECHA)
	LDLo	714 mg/kg (human) (RTECS)
Dermal	LD50.	>2000 mg/kg (rabbit) (US-EPA) (Registrant, ECHA: No deaths occured at this concentration)
	LC50	5750 mg/l/2h (rat) (OECD 403)

· **Primary irritant effect:**
· **on the skin:** Causes skin irritation.
· **on the eye:** Causes serious eye irritation.
· **Information on components:**
CAS 7727-21-1: chronic: dermatitis

CAS: 497-19-8 sodium carbonate		
Irritation of skin	OECD 404	(rabbit: slight irritation)

(Contd. on page 6)

Safety Data Sheet
acc. to OSHA HCS (HazCom 2012)

Printing date 12/06/2017 Reviewed on 12/06/2017

Trade name: Digestion Reagent Total Nitrogen Tube Test

(Contd. of page 5)

Irritation of eyes	OECD 405	(rabbit: irritation) (US-EPA) (IUCLID)

· **Sensitization:**
May cause allergy or asthma symptoms or breathing difficulties if inhaled.
May cause an allergic skin reaction.

· **Carcinogenic categories**

· **IARC (International Agency for Research on Cancer)**
None of the ingredients is listed.

· **NTP (National Toxicology Program)**
None of the ingredients is listed.

· **OSHA-Ca (Occupational Safety & Health Administration)**
None of the ingredients is listed.

· **Other information:** see section 8 / 15

· **Synergistic Products:** None

· **CMR effects (carcinogenity, mutagenicity and toxicity for reproduction):** The following statements refer to the mixture:
· **Germ cell mutagenicity** Based on available data, the classification criteria are not met.
· **Carcinogenicity** Based on available data, the classification criteria are not met.
· **Reproductive toxicity** Based on available data, the classification criteria are not met.

· **STOT (specific target organ toxicity) -single exposure** May cause respiratory irritation.
· **STOT (specific target organ toxicity) -repeated exposure** Based on available data, the classification criteria are not met.
· **Aspiration hazard** Based on available data, the classification criteria are not met.

· **Information on components:**	
CAS: 497-19-8 sodium carbonate	
OECD 471	(negative) (Bacterial Reverse Mutation Test - Ames test) (Escherichia coli)

· **Additional toxicological information:** Other dangerous properties can not be excluded.

12 Ecological information

· **Toxicity**

· **Aquatic toxicity:**	
CAS: 7727-21-1 potassium persulphate	
EC50	120 mg/l/48h (Daphnia magna)
CAS: 497-19-8 sodium carbonate	
EC50	220–227 mg/l/48h (Daphnia magna) (US-EPA) (Merck)
LC50	300 mg/l/96h (bluegill) (IUCLID) (Registrant, ECHA)

· **Bacterial toxicity:**	
CAS: 7727-21-1 potassium persulphate	
EC50	83.7 mg/l (Bacterial toxicity) (72h)

· **Persistence and degradability** .
· **Other information:**
Mixture of inorganic compounds.
Methods for the determination of biodegradability are not applicable to inorganic substances.
· **Bioaccumulative potential** No further relevant information available.
· **Mobility in soil** No further relevant information available.
· **Other adverse effects**
Reacts with water to form toxic decomposition products.
Avoid transfer into the environment.

(Contd. on page 7)

Safety Data Sheet
acc. to OSHA HCS (HazCom 2012)

Printing date 12/06/2017 Reviewed on 12/06/2017

Trade name: Digestion Reagent Total Nitrogen Tube Test

(Contd. of page 6)

13 Disposal considerations

· **Waste treatment methods**
· **Recommendation:**
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
Hand over to hazardous waste disposers.

· **Uncleaned packagings:**
· **Recommendation:** Disposal must be made according to official regulations.
· **Recommended cleansing agent:** Water, if necessary with cleansing agents.

14 Transport information

· **UN-Number**	
· **DOT, IMDG, IATA**	UN1492
· **UN proper shipping name**	
· **DOT**	Potassium persulfate
· **IMDG, IATA**	POTASSIUM PERSULPHATE
· **Transport hazard class(es)**	
· **DOT**	
	
· **Class**	5.1 Oxidizing substances
· **Label**	5.1
· **IMDG, IATA**	
	
· **Class**	5.1 Oxidizing substances
· **Label**	5.1
· **Packing group**	
· **DOT, IMDG, IATA**	III
· **Environmental hazards:**	Not applicable.
· **Special precautions for user**	Warning: Oxidizing substances
· **Danger code (Kemler):**	50
· **Stowage Category**	A
· **Segregation Code**	SG39 Stow "separated from" ammonium compounds other than AMMONIUM PERSULPHATE (UN 1444). SG49 Stow "separated from" cyanides
· **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**	Not applicable.
· **Transport/Additional information:**	
· **DOT**	
· **Quantity limitations**	On passenger aircraft/rail: 25 kg On cargo aircraft only: 100 kg
· **Limited quantity (LQ):**	5 kg
· **Excepted quantities (EQ)**	Code: E1 Maximum net quantity per inner packaging: 30 g Maximum net quantity per outer packaging: 1000 g
· **IMDG**	
· **Limited quantities (LQ)**	5 kg

(Contd. on page 8)

Safety Data Sheet
acc. to OSHA HCS (HazCom 2012)

Printing date 12/06/2017 Reviewed on 12/06/2017

Trade name: Digestion Reagent Total Nitrogen Tube Test

(Contd. of page 7)

· **Excepted quantities (EQ)**	Code: E1 Maximum net quantity per inner packaging: 30 g Maximum net quantity per outer packaging: 1000 g

* 15 Regulatory information

· **Safety, health and environmental regulations/legislation specific for the substance or mixture**
· **Sara**

· **Section 355 (Extremely hazardous substances):**
None of the ingredients is listed.

· **Section 313 (Specific toxic chemical listings):**
None of the ingredients is listed.

· **TSCA (Toxic Substances Control Act):**
All ingredients are listed.

· **Proposition 65**

· **Chemicals known to cause cancer:**
None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for females:**
None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for males:**
None of the ingredients is listed.

· **Chemicals known to cause developmental toxicity:**
None of the ingredients is listed.

· **New Jersey Right-to-Know List:**
CAS: 7727-21-1 | potassium persulphate

· **New Jersey Special Hazardous Substance List:**
None of the ingredients is listed.

· **Pennsylvania Right-to-Know List:**
CAS: 7727-21-1 | potassium persulphate

· **Pennsylvania Special Hazardous Substance List:**
None of the ingredients is listed.

· **EPA (Environmental Protection Agency)**
None of the ingredients is listed.

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**
None of the ingredients is listed.

· **Information about limitation of use:** Employment restrictions concerning young persons must be observed.

· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

* 16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Relevant phrases**
H272 May intensify fire; oxidizer.
H302 Harmful if swallowed.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335 May cause respiratory irritation.
· **Date of preparation / last revision** 12/06/2017 / 13

(Contd. on page 9)

Safety Data Sheet
acc. to OSHA HCS (HazCom 2012)

Printing date 12/06/2017 Reviewed on 12/06/2017

Trade name: Digestion Reagent Total Nitrogen Tube Test

(Contd. of page 8)

· **Abbreviations and acronyms:**
OECD: Organisation for Economic Co-operation and Development
STOT: specific target organ toxicity
SE: single exposure
RE: repeated exposure
EC50: half maximal effective concentration
IC50: hallf maximal inhibitory concentration
NOEL or NOEC: No Observed Effect Level or Concentration
ACGIH® - American Conference of Governmental Industrial Hygienists
•A1 - Confirmed human carcinogen
•A2 - Suspected human carcinogen
•A3 - Confirmed animal carcinogen with unknown relevance to humans
•A4 - Not classifiable as a human carcinogen
•A5 - Not suspected as a human carcinogen
IARC - International Agency for Research on Cancer
•Group 1 - Carcinogenic to humans
•Group 2A - Probably carcinogenic to humans
•Group 2B - Possibly carcinogenic to humans
•Group 3 - Not classifiable as to carcinogenicity to humans
•Group 4 - Probably not carcinogenic to humans
NTP - National Toxicology Program, U.S. Department of Health and Human Services
•Group K - Known to be Human Carcinogens
•Group R - Reasonably Anticipated to be Human Carcinogens
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
NIOSH: National Institute for Occupational Safety
OSHA: Occupational Safety & Health
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit
Ox. Sol. 3: Oxidizing solids – Category 3
Acute Tox. 4: Acute toxicity – Category 4
Skin Irrit. 2: Skin corrosion/irritation – Category 2
Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A
Resp. Sens. 1: Respiratory sensitisation – Category 1
Skin Sens. 1: Skin sensitisation – Category 1
STOT SE 3: Specific target organ toxicity (single exposure) – Category 3

· **Sources**
Data arise from safety data sheets, reference works and literature.
ECHA: European CHemicals Agency http://echa.europa.eu
RTECS (Registry of Toxic Effects of Chemical Substances)

· *** Data compared to the previous version altered.**