SAFETY DATA SHEET

Version 8.7
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SECTION 1: Identification of the hazardous chemical and of the supplier

1.1 Product identifiers

Product name : Nitric acid 65% for analysis EMSURE® Reag. Ph Eur,ISO

Product Number : 1.00456
Catalogue No. : 100456
Brand : Millipore

1.2 Other means of identification

No data available

1.3 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Reagent for analysis, Chemical production

1.4 Details of the supplier of the safety data sheet

Company : Merck Sdn. Bhd.
Co. No: 178145
No. 4, Jalan U1/26, Section U1,
40150 HICOM GLENMARIE INDUSTRIAL PARK,SHAH ALA
MALAYSIA

Telephone : +60 (0)3-74943688
Fax : +60 (0)3-74910850

1.5 Emergency telephone

Emergency Phone # : 1-800-815-308 (CHEMTREC) * + 62 0800 140 1253 (Customer Call Centre)

Section 2: Hazard identification

2.1 GHS Classification

Classification according to CLASS regulations 2013
Oxidizing liquids (Category 3), H272
Corrosive to Metals (Category 1), H290
Acute toxicity, Inhalation (Category 3), H331
Skin corrosion/irritation (Category 1A), H314
Serious eye damage/eye irritation (Category 1), H318

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Labelling according to CLASS regulations 2013
Pictogram

Signal word Danger

Hazard statement(s)

H272	May intensify fire; oxidizer.
H290	May be corrosive to metals.
H314	Causes severe skin burns and eye damage.
H331	Toxic if inhaled.

Precautionary statement(s)

Prevention

P210	Keep away from heat.
P220	Keep/Store away from clothing/ combustible materials.
P221	Take any precaution to avoid mixing with combustibles.
P264	Wash skin thoroughly after handling.
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response

P303 + P361 + P353	IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P304 + P340 + P310	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or doctor/ physician.
P305 + P351 + P338 + P310	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/ physician.
P370 + P378	In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.

Storage

P403 + P233	Store in a well-ventilated place. Keep container tightly closed.

2.3 Other hazards - none

SECTION 3: Composition and information of the ingredients of the hazardous chemical

Substance / Mixture : Mixture

3.2 Mixtures

Hazardous ingredients

Component		Classification	Concentration
nitric acid			
CAS-No. EC-No. Index-No.	7697-37-2 231-714-2 007-030-00-3	Ox. Liq. 2; Met. Corr. 1; Acute Tox. 3; 1A; 1; H272, H290, H331, H314, H318 Concentration limits: >= 1 %: Met. Corr. 1, H290; 1 - < 5 %: Skin Irrit. 2, H315; 1 - < 3 %: Eye Irrit. 2, H319; >= 3 %: 1, H318; >= 99 %: Ox. Liq. 2, H272; >= 99 %: Skin Corr. 1A, H314; >= 99 %: Eye Dam. 1, H318; 65 - < 99 %: Ox.	>= 65 - < 70.0001 %

	Liq. 3, H272; 65 - < 99 %: Skin Corr. 1A, H314; 65 - < 99 %: Eye Dam. 1, H318; 20 - < 65 %: Skin Corr. 1A, H314; 20 - < 65 %: Eye Dam. 1, H318; 5 - < 20 %: Skin Corr. 1B, H314; 5 - < 20 %: Eye Dam. 1, H318; >= 65 %: Ox. Liq. 3, H272; >= 20 %: Skin Corr. 1A, H314; 5 - < 20 %: Skin Corr. 1B, H314;	

For the full text of the H-Statements mentioned in this Section, see Section 16.

SECTION 4: First aid measures

4.1 Description of first-aid measures

General advice
First aiders need to protect themselves.

If inhaled
After inhalation: fresh air. Call in physician.If breathing stops: immediately apply artificial respiration, if necessary also oxygen.

In case of skin contact
In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower. Call a physician immediately.

In case of eye contact
After eye contact: rinse out with plenty of water. Immediately call in ophthalmologist. Remove contact lenses.

If swallowed
After swallowing: make victim drink water (two glasses at most), avoid vomiting (risk of perforation). Call a physician immediately. Do not attempt to neutralise.

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media
For this substance/mixture no limitations of extinguishing agents are given.

5.2 Special hazards arising from the substance or mixture
Nitrogen oxides (NOx)
Not combustible.

Has a fire-promoting effect due to release of oxygen.
Ambient fire may liberate hazardous vapours.
Fire may cause evolution of:
nitrous gases, nitrogen oxides

5.3 Advice for firefighters
Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

5.4 Further information
Suppress (knock down) gases/vapors/mists with a water spray jet. Cool closed containers exposed to fire with water spray. Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
Advice for non-emergency personnel: Avoid substance contact. Do not breathe vapors, aerosols. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.
For personal protection see section 8.

6.2 Environmental precautions
Do not empty into drains.

6.3 Methods and materials for containment and cleaning up
Cover drains. Collect, bind, and pump off spills.Observe possible material restrictions (see sections 7 and 10).Take up with liquid-absorbent and neutralising material (e.g. Chemizorb® H^+, Merck Art. No. 101595). Dispose of properly. Clean up affected area.

6.4 Reference to other sections
For disposal see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling
Observe label precautions.**Advice on safe handling**
Work under hood. Do not inhale substance/mixture. Avoid generation of vapours/aerosols.

Hygiene measures
Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions
No metal or light-weight-metal containers.
Tightly closed. Do not store near combustible materials. Keep locked up or in an area accessible only to qualified or authorized persons.

Recommended storage temperature see product label.

Storage class
Storage class (TRGS 510): 5.1B: Oxidizing hazardous materials

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

SECTION 8: Exposure controls and personal protection

8.1 Control parameters

Ingredients with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
nitric acid	7697-37-2	TWA	2 ppm 5.2 mg/m3	Malaysia. Occupational Safety and Health (Use and Standards of Exposure of Chemicals Hazardous to Health) Regulations 2000.

8.2 Exposure controls

Appropriate engineering controls

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

Personal protective equipment

Eye/face protection

Tightly fitting safety goggles

Skin protection

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).
Full contact
Material: Viton®
Minimum layer thickness: 0.7 mm
Break through time: > 480 min
Material tested:Vitoject® (KCL 890 / Aldrich Z677698, Size M)

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).
Splash contact
Material: Latex gloves
Minimum layer thickness: 0.6 mm
Break through time: > 120 min
Material tested:Lapren® (KCL 706 / Aldrich Z677558, Size M)

Body Protection

acid-resistant protective clothing

Respiratory protection

required when vapours/aerosols are generated. Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system.

Control of environmental exposure
Do not empty into drains.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

a)	Appearance	Form: liquid Color: colorless
b)	Odor	stinging
c)	Odor Threshold	0.27 ppm - (anhydrous substance)
d)	pH	< 1 at 20 °C
e)	Melting point/freezing point	Melting point: ca.-32 °C
f)	Initial boiling point and boiling range	121 °C at 1,013 hPa
g)	Flash point	Not applicable
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	No data available
j)	Upper/lower flammability or explosive limits	No data available
k)	Vapor pressure	ca.9.4 hPa at 20 °C
l)	Vapor density	No data available
m)	Density	1.39 g/cm3 at 20 °C
	Relative density	No data available
n)	Water solubility	at 20 °C soluble
o)	Partition coefficient: n-octanol/water	No data available
p)	Autoignition temperature	No data available
q)	Decomposition temperature	Distillable in an undecomposed state at normal pressure.
r)	Viscosity	Viscosity, kinematic: No data available Viscosity, dynamic: No data available
s)	Explosive properties	Not classified as explosive.
t)	Oxidizing properties	The substance or mixture is classified as oxidizing with the category 3.

9.2 Other safety information

No data available

SECTION 10: Stability and reactivity

10.1 Reactivity
strong oxidising agent

10.2 Chemical stability
No data available

10.3 Possibility of hazardous reactions
Risk of explosion with:
Acetone
acetonitrile
acetylidene
Alcohols
Dithallium trioxide
antimony hydride
arsenic hydride
Organic Substances
Benzene
phosphides
anilines
Amines
Halogenated hydrocarbon
Diethyl ether
dimethyl ether
hydrazines
Nitro compounds
Sulfides
Dioxane
acetic acid
Acetic anhydride
ethanol
Ethylene glycol
Fluorine
Formaldehyde
Rubber
oils
Hydrazine hydrate
Hydrocarbons
Copper
lithium silicide
organic solvents
Manganese
Cyanides
Powdered metals
Methanol
petrol
Sodium hydrosulfide
phosphorus hydrogen
anhydrides
Reducing agents
sulphur dioxide
Boranes
thiocyanates
Titanium
Toluene

Impurities
Nitric acid
hydrogen peroxide
Tin
sugars
xylene
dichloromethane
carbon/soot
potassium chlorate
with
Organic Substances
mercury(II) nitrate
with
ethanol
Organic Substances
with
sulfuric acid
Nitrobenzene
with
sulfuric acid
potassium permanganate
with
Alcohols
glycerol
with
sulfuric acid
Risk of ignition or formation of inflammable gases or vapours with:
Amines
Ammonia
combustible substances
Aldehydes
furfuryl alcohol
hydrogen iodide
Potassium
Lithium
Magnesium
phosphides
sodium
hydrides
phosphorus
pyridine
hydrogen sulphide
3-BROMO-5-CHLORO-4-HYDROXYBENZALDEHYDE
Violent reactions possible with:
Nitriles
antimony
arsenic
Boron
ferric oxide
alkalines
sodium hypochlorite
formic acid
halogen-halogen compounds
Germanium
glycerol

nitrides
Sodium hydroxide solution
Sodium hydroxide
sulfuric acid
selenium
Bismuth
chlorates

10.4 Conditions to avoid
No data available

10.5 Incompatible materials
Cellulose, MetalsContact with metals may lead to the formation of nitrous gases and hydrogen.

10.6 Hazardous decomposition products
In the event of fire: see section 5

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Mixture

Acute toxicity
Symptoms: If ingested, severe burns of the mouth and throat, as well as a danger of perforation of the esophagus and the stomach.
Acute toxicity estimate Inhalation - 4 h - 3.85 mg/l
(Calculation method)
Dermal: No data available

Skin corrosion/irritation
No data available

Serious eye damage/eye irritation
Mixture causes serious eye damage. Risk of blindness!

Respiratory or skin sensitization
No data available

Germ cell mutagenicity
No data available

Carcinogenicity
No data available

Reproductive toxicity
No data available

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

11.2 Additional Information

Irritation and corrosion, Risk of blindness!, Cough, Shortness of breath

Irritation and corrosion
Cough
Shortness of breath
Bloody vomiting
death
Risk of blindness!
strong pain (risk of perforation!)
tissue damage

The following applies to nitrites/nitrates in general: methaemoglobinaemia after the uptake of large quantities.

Other dangerous properties can not be excluded.

This substance should be handled with particular care.

Components

nitric acid

Acute toxicity
Oral: No data available
Acute toxicity estimate Inhalation - 4 h - 2.65 mg/l
(Expert judgment)
Dermal: No data available

Skin corrosion/irritation
Skin - Rabbit
Result: Causes severe burns.
Remarks: (IUCLID)
Causes poorly healing wounds.

Serious eye damage/eye irritation
Eyes - Rabbit
Result: Causes burns.
Remarks: (IUCLID)
Causes serious eye damage.

Respiratory or skin sensitization
No data available

Germ cell mutagenicity
Test Type: Ames test
Test system: Salmonella typhimurium
Result: negative

Carcinogenicity
No data available

Reproductive toxicity
No data available

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

SECTION 12: Ecological information

12.1 Toxicity

Mixture
No data available

12.2 Persistence and degradability
The methods for determining the biological degradability are not applicable to inorganic substances.
No data available

12.3 Bioaccumulative potential
No data available

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Endocrine disrupting properties
No data available

12.7 Other adverse effects
Biological effects:
Harmful effect due to pH shift.
Forms corrosive mixtures with water even if diluted.
Does not cause biological oxygen deficit.
Hazard for drinking water supplies.
Discharge into the environment must be avoided.
No data available

Components

nitric acid
No data available

SECTION 13: Disposal information

13.1 Waste treatment methods

Product
Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself. See www.retrologistik.com for processes regarding the return of chemicals and containers, or contact us there if you have further questions. According to Quality Environment Regulation (Scheduled Waste) 2005, waste need to be sent to designated premise for recycle, treatment or disposal. Please contact Kualiti Alam for waste classification and correct disposal method.

SECTION 14: Transportation information

14.1 UN number

ADR/RID: 2031 IMDG: 2031 IATA-DGR: 2031

14.2 UN proper shipping name

ADR/RID: NITRIC ACID
IMDG: NITRIC ACID
IATA-DGR: Nitric acid
Passenger Aircraft: Not permitted for transport

14.3 Transport hazard class(es)

ADR/RID: 8 (5.1) IMDG: 8 (5.1) IATA-DGR: 8 (5.1)

14.4 Packaging group

ADR/RID: II IMDG: II IATA-DGR: II

14.5 Environmental hazards

ADR/RID: no IMDG Marine pollutant: no IATA-DGR: no

14.6 Special precautions for user

None

14.7 Incompatible materials

Cellulose, MetalsContact with metals may lead to the formation of nitrous gases and hydrogen.

Other regulations

Hazchem Code : 2R

SECTION 15: Regulatory information

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

Notification status

DSL:	All components of this product are on the Canadian DSL
ENCS:	On the inventory, or in compliance with the inventory
ISHL:	On the inventory, or in compliance with the inventory
KECI:	On the inventory, or in compliance with the inventory
NZIoC:	Not in compliance with the inventory
PICCS:	On the inventory, or in compliance with the inventory

SECTION 16: Other information

Full text of H-Statements referred to under sections 2 and 3.

H272	May intensify fire; oxidizer.
H290	May be corrosive to metals.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H331	Toxic if inhaled.

Further information

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of

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