SAFETY DATA SHEET

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 *Product identifiers*

Product name: **NITRIC ACID**

CAS-No.: **7697-37-2**

Product Number: **L19240**

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

Identified uses: Laboratory chemicals, Manufacture of substances

1.3 *Details of the supplier of the safety data sheet*

Company : Philip Harris Ltd., 2 Gregory Street, Hyde, Cheshire, SK14 4HR, UNITED KINGDOM

Telephone: +44 (0)845 1200 506 Fax: +44 (0)161 367 2140

Email: enquiries@philipharris.co.uk

1.4 *Emergency telephone number*

Emergency Phone #: **+44 (0)845 1200 506**

2. HAZARDS IDENTIFICATION

2.1 *Classification of the substance or mixture*

According to Regulation (EC) No1272/2008; Oxidizing liquids (Category 3), Skin corrosion (Category 1A).

According to European Directive 67/548/EEC as amended: Contact with combustible material may cause fire.

2.2 *Label elements*

Pictogram 

Signal word Danger

Hazard statement(s): H272 May intensify fire; oxidiser. H314 Causes severe skin burns and eye damage.

Precautionary statement(s): P220 Keep/Store away from clothing/ combustible materials. P280 Wear protective gloves/ protective clothing/ eye protection/ face protection. 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 CENTER or doctor/ physician.

Hazard symbol(s): 

R-phrase(s): R8 Contact with combustible material may cause fire. R35 Causes severe burns.

S-phrase(s): S23 Do not breathe gas/fumes/vapour/spray. S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S36 Wear suitable protective clothing. S45 In case of accident or if you feel unwell, seek medical advice immediately
(show the label where possible).

2.3 *Other hazards* – no data available

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 *Substances*

Nitric acid

Formula:	HNO_3
Molecular Weight:	**63.01**
CAS-No.:	**7697-37-2**
EC-No.:	**231-714-2**
Index-No.:	**007-004-00-1**

Water

Formula:	H_2O
Molecular Weight:	**18.01**
CAS-No.:	**7732-18-5**
EC-No.:	**231-791-2**

3.2 *Mixtures*

Component	Classification	Concentration
Nitric acid	O, C, R 8 - R35	70%
Water	-	30%

4. FIRST AID MEASURES

4.1 *Description of first aid measures*

General advice: Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled: If breathed in, move person into fresh air. If not breathing, give artificial respiration.

In case of skin contact: Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water.

In case of eye contact: Rinse thoroughly with plenty of water for at least 15 minutes.

If swallowed: Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water.

4.2 *Most important symptoms and effects, both acute and delayed:* no data available

4.3 *Indication of immediate medical attention and special treatment needed:* no data available

5. FIRE-FIGHTING MEASURES

5.1 *Extinguishing media*

Suitable extinguishing media: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 *Special hazards arising from the substance or mixture:* no data available

5.3 ***Precautions for fire-fighters:*** Wear self contained breathing apparatus for fire fighting if necessary.

5.4 ***Further information:*** Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

6.1 ***Personal precautions, protective equipment and emergency procedures:*** Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.

6.2 ***Environmental precautions:*** Do not let product enter drains.

6.3 ***Methods and materials for containment and cleaning up:*** Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).

6.4 ***Reference to other sections:*** For disposal see section 13.

7. HANDLING AND STORAGE

7.1 ***Precautions for safe handling:*** Avoid inhalation of vapour or mist. Keep away from sources of ignition - No smoking. Keep away from combustible material.

7.2 ***Conditions for safe storage, including any incompatibilities:*** Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

7.3 ***Specific end uses:*** no data available.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 ***Control parameters***

Components with workplace control parameters

Component	CAS No.	Value	Control Parameters	Update
Nitric acid	7697-37-2	STEL	1ppm 2.6mg/m^3	2007-08-01
Nitric acid	7697-37-2	STEL	1ppm 2.6mg/m^3	2006-02-09

UK. EH40 Occupational Exposure Limits

Europe. Indicative occupational exposure limit values. Remarks Indicative

8.2 ***Exposure controls***

Appropriate engineering controls: Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment

Eye/face protection: Tightly fitting safety goggles. Faceshield (8-inch minimum).

Skin protection: The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it. Handle with gloves.

Body Protection: Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Respiratory protection: Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multipurpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a) Appearance:	**Form**: Liquid **Colour**: Colourless
b) Odour:	no data available
c) Odour Threshold:	no data available
d) pH:	pH < 1 at 20 °C
e) Melting/freezing point:	Melting point/range: no data available
f) Initial boiling point and boiling range:	100 °C at 1,013 hPa
g) Flash point:	no data available
h) Evaporation rate:	no data available
i) Flammability (solid, gas):	no data available
j) Upper/lower flammability or explosive limits:	no data available
k) Vapour pressure:	11 hPa at 20 °C
l) Vapour density:	no data available
m) Relative density:	1.48 g/cm3
n) Water solubility:	completely soluble
o) Partition coefficient: n-octanol/water:	no data available
p) Autoignition temperature:	no data available
q) Decomposition temperature:	no data available
r) Viscosity:	no data available
s) Explosive properties:	no data available
t) Oxidizing properties:	no data available
9.2 ***Other safety information:***	no data available

10. STABILITY AND REACTIVITY

10.1 ***Reactivity:*** no data available

10.2 ***Chemical stability:*** Stable under recommended storage conditions.

10.3 ***Possibility of hazardous reactions:*** no data available

10.4 ***Conditions to avoid:*** May discolor on exposure to air and light.

10.5 ***Incompatible materials:*** Alkali metals, Organic materials, Acetic anhydride, Acetonitrile, Alcohols, Acrylonitrile

10.6 ***Hazardous decomposition products:*** Hazardous decomposition products formed under fire conditions. - Nature of decomposition products not known.

11. TOXICOLOGICAL INFORMATION

11.1 *Information on toxicological effects*

Acute toxicity: no data available

Skin corrosion/irritation: Skin - rabbit - Extremely corrosive and destructive to tissue. - Draize Test (Nitric acid)

Serious eye damage/eye irritation: no data available

Respiratory or skin sensitization: no data available

Germ cell mutagenicity: Developmental Toxicity - rat – Oral Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus). (Nitric acid).

Carcinogenicity: IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

Reproductive toxicity: Reproductive toxicity - rat – Oral Effects on Newborn: Biochemical and metabolic. (Nitric acid)

Specific target organ toxicity - single exposure: Lungs, Teeth, Cardiovascular system.

Specific target organ toxicity - repeated exposure: no data available

Aspiration hazard: no data available

Potential health effects

Inhalation May be harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.

Ingestion May be harmful if swallowed. Causes severe burns.

Skin May be harmful if absorbed through skin. Causes severe skin burns.

Eyes Causes severe eye burns.

Signs and Symptoms of Exposure: Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., Inhalation may provoke the following symptoms:, spasm, inflammation and edema of the bronchi, spasm, inflammation and edema of the larynx, pneumonitis, Symptoms and signs of poisoning are:, burning sensation, Cough, wheezing, laryngitis, Shortness of breath, Headache, Nausea, Vomiting, Pulmonary edema. Effects may be delayed., Large doses may cause: conversion of hemoglobin to methemoglobin, producing cyanosis; marked fall in blood pressure, leading to collapse, coma, and possibly death.

Additional Information: RTECS: GL5325000

12. ECOLOGICAL INFORMATION

12.1 *Toxicity:* Toxicity to fish LC50 - *Asterias rubens* - 100 - 330 mg/l - 48 h (Nitric acid)

12.2 *Persistence and degradability:* 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:* no data available

12.6 *Other adverse effects:* May be harmful to aquatic organisms due to the shift of the pH.

13. DISPOSAL CONSIDERATIONS

13.1 *Waste treatment methods*

Product: Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Observe all federal, state, and local environmental regulations.

Contaminated packaging: Dispose of as unused product.

14. TRANSPORT INFORMATION

14.1 *UN-Number*

ADR/RID:	2031	IMDG:	2031	IATA:	2031

14.2 *UN proper shipping name*

ADR/RID:	NITRIC ACID
IMDG:	NITRIC ACID
IATA:	NITRIC ACID

14.3 *Transport hazard class(es)*

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

14.4 *Packaging group*

ADR/RID:	I	IMDG:	I	IATA:	I

14.5 *Environmental hazards*

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

14.6 *Special precautions for users:* EMS-No: F-A, S-Q. IATA Passenger: Not permitted for transport

15. REGULATORY INFORMATION

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

15.1 *Safety, health and environmental regulations/legislation specific for the substance or mixture:* no data available

15.2 *Chemical Safety Assessment:* no data available

16. OTHER INFORMATION

EC Label: Hazard symbols; O Oxidising C Corrosive R-phrase(s): R 8 Contact with combustible material may cause fire. R35 Causes severe burns. S-phrase(s): S23 Do not breathe gas/fumes/vapour/spray. S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S36 Wear suitable protective clothing. S45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). Hazardous components which must be listed on the label: 7697-37-2 Nitric acid