MATERIAL SAFETY DATA SHEET (MSDS)

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

1.1. Product identifier
Product form : Mixture
Product code : 03603

1.2. Relevant identified uses of the substance or mixture and uses advised against
1.2.1. Relevant identified uses
Industrial/Professional use spec : Industrial
For professional use only

1.2.2. Uses advised against
No additional information available

1.3. Details of the supplier of the safety data sheet
LOBA CHEMIE PVT.LTD.
107 Wode House Road, Jehangir Villa, Colaba
400005 Mumbai - INDIA
T +91 22 6663 6663 - F +91 22 6663 6699
info@lobachemie.com - www.lobachemie.com

1.4. Emergency telephone number
Emergency number : + 91 22 6663 6663 (9:00am - 6:00 pm)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture
Classification according to Regulation (EC) No. 1272/2008 [CLP]

Skin corrosion/irritation, H314
Category 1A

Full text of H statements : see section 16

Adverse physicochemical, human health and environmental effects
No additional information available
2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP):

GHS05

Signal word (CLP): Danger
Hazard statements (CLP):
H314 - Causes severe skin burns and eye damage.
Precautionary statements (CLP):
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/doctor

2.3. Other hazards
No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substances
Not applicable

3.2. Mixtures

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
<th>Classification according to Regulation (EC) No. 1272/2008 [CLP]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water</td>
<td>(CAS-No.) 7732-18-5 (EC-No.) 231-791-2</td>
<td>50 - 75</td>
<td>Not classified</td>
</tr>
<tr>
<td>Nitric acid</td>
<td>(CAS-No.) 7697-37-2 (EC-No.) 231-714-2 (EC Index-No.) 007-004-00-1</td>
<td>15 - 25</td>
<td>Ox. Liq. 1, H271 Skin Corr. 1A, H314</td>
</tr>
<tr>
<td>POTASSIUM IODIDE Extra Pure</td>
<td>(CAS-No.) 7681-11-0</td>
<td>15 - 25</td>
<td>Acute Tox. 4 (Oral), H302 Eye Irrit. 2, H319 Skin Irrit. 2, H315</td>
</tr>
<tr>
<td>BISMUTH SUBNITRATE 71%</td>
<td>(CAS-No.) 10361-46-3</td>
<td>5 - 10</td>
<td>Not classified</td>
</tr>
</tbody>
</table>

Full text of H-statements: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures after inhalation: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor.

First-aid measures after skin contact: Take off immediately all contaminated clothing. Rinse skin with water/shower. Immediately call a POISON CENTER/doctor.
### First-aid measures after eye contact
Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical advice/attention.

### First-aid measures after ingestion
Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER/doctor.

### 4.2. Most important symptoms and effects, both acute and delayed
Symptoms/effects: Causes severe skin burns and eye damage.

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

### SECTION 5: Firefighting measures

#### 5.1. Extinguishing media

Unsuitable extinguishing media: Do not use a heavy water stream.

#### 5.2. Special hazards arising from the substance or mixture
No additional information available.

#### 5.3. Advice for firefighters
Protection during firefighting: Do not enter fire area without proper protective equipment, including respiratory protection.

### SECTION 6: Accidental release measures

#### 6.1. Personal precautions, protective equipment and emergency procedures

##### 6.1.1. For non-emergency personnel
Emergency procedures: Evacuate unnecessary personnel.

##### 6.1.2. For emergency responders
Protective equipment: Use personal protective equipment as required.
Emergency procedures: Ventilate area.

#### 6.2. Environmental precautions
Avoid release to the environment.

##### 6.3. Methods and material for containment and cleaning up
Methods for cleaning up: Collect spillage. On land, sweep or shovel into suitable containers.

#### 6.4. Reference to other sections
No additional information available.

### SECTION 7: Handling and storage

#### 7.1. Precautions for safe handling
Precautions for safe handling: Do not breathe vapours. Avoid contact with skin and eyes. Provide good ventilation in process area to prevent formation of vapour.

Hygiene measures: Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

#### 7.2. Conditions for safe storage, including any incompatibilities
Storage conditions: Store in a well-ventilated place. Keep container tightly closed.

#### 7.3. Specific end use(s)
No additional information available.

### SECTION 8: Exposure controls/personal protection

#### 8.1. Control parameters
No additional information available.
8.2. Exposure controls

- **Hand protection**: Protective gloves
- **Eye protection**: Chemical goggles or face shield
- **Skin and body protection**: Wear suitable protective clothing
- **Respiratory protection**: [In case of inadequate ventilation] wear respiratory protection.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

- **Physical state**: Liquid
- **Colour**: Brownish yellow.
- **Odour**: Odourless.
- **Odour threshold**: No data available
- **pH**: No data available
- **Relative evaporation rate (butylacetate=1)**: No data available
- **Melting point**: No data available
- **Freezing point**: No data available
- **Boiling point**: No data available
- **Flash point**: No data available
- **Auto-ignition temperature**: No data available
- **Decomposition temperature**: No data available
- **Flammability (solid, gas)**: No data available
- **Vapour pressure**: No data available
- **Relative vapour density at 20 °C**: No data available
- **Relative density**: No data available
- **Density**: 1.02 g/cm³
- **Solubility**: Water: Soluble in water
- **Log Pow**: No data available
- **Viscosity, kinematic**: No data available
- **Viscosity, dynamic**: No data available
- **Explosive properties**: No data available
- **Oxidising properties**: No data available
- **Explosive limits**: No data available
9.2. Other information
No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity
No additional information available

10.2. Chemical stability
Stable under normal conditions.

10.3. Possibility of hazardous reactions
No additional information available

10.4. Conditions to avoid

10.5. Incompatible materials
No additional information available

10.6. Hazardous decomposition products
No additional information available

SECTION 11: Toxicological information

11.1. Information on toxicological effects

<table>
<thead>
<tr>
<th>Effect</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute toxicity</td>
<td>Not classified</td>
</tr>
<tr>
<td>Skin corrosion/irritation</td>
<td>Causes severe skin burns and eye damage.</td>
</tr>
<tr>
<td>Serious eye damage/irritation</td>
<td>Serious eye damage, category 1, implicit</td>
</tr>
<tr>
<td>Respiratory or skin sensitisation</td>
<td>Not classified</td>
</tr>
<tr>
<td>Germ cell mutagenicity</td>
<td>Not classified</td>
</tr>
<tr>
<td>Carcinogenicity</td>
<td>Not classified</td>
</tr>
<tr>
<td>Reproductive toxicity</td>
<td>Not classified</td>
</tr>
<tr>
<td>STOT-single exposure</td>
<td>Not classified</td>
</tr>
<tr>
<td>STOT-repeated exposure</td>
<td>Not classified</td>
</tr>
<tr>
<td>Aspiration hazard</td>
<td>Not classified</td>
</tr>
</tbody>
</table>

SECTION 12: Ecological information

12.1. Toxicity
No additional information available
12.2. Persistence and degradability
No additional information available

12.3. Bioaccumulative potential
No additional information available

12.4. Mobility in soil
No additional information available

12.5. Results of PBT and vPvB assessment
No additional information available

12.6. Other adverse effects
No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods
Product/Packaging disposal recommendations: Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

14.1. UN number
UN-No. (ADR) : 2031
UN-No. (IMDG) : 2031
UN-No. (IATA) : 2031
UN-No. (ADN) : 2031
UN-No. (RID) : 2031

14.2. UN proper shipping name
Proper Shipping Name (ADR) : NITRIC ACID
Proper Shipping Name (IMDG) : NITRIC ACID
Proper Shipping Name (IATA) : Nitric acid
Proper Shipping Name (ADN) : NITRIC ACID
Proper Shipping Name (RID) : NITRIC ACID
Transport document description (ADR) : UN 2031 NITRIC ACID, 8, II, (E)
Transport document description (IMDG) : UN 2031 NITRIC ACID, 8, II
Transport document description (IATA) : UN 2031 Nitric acid, 8, II
Transport document description (ADN) : UN 2031 NITRIC ACID, 8, II
Transport document description (RID) : UN 2031 NITRIC ACID, 8, II

14.3. Transport hazard class(es)
ADR
Transport hazard class(es) (ADR) : 8
Danger labels (ADR) : 8
IMDG
Transport hazard class(es) (IMDG) : 8
Danger labels (IMDG) : 8

IATA
Transport hazard class(es) (IATA) : 8
Hazard labels (IATA) : 8

ADN
Transport hazard class(es) (ADN) : 8
Danger labels (ADN) : 8

RID
Transport hazard class(es) (RID) : 8
Danger labels (RID) : 8

14.4. Packing group
Packing group (ADR) : II
Packing group (IMDG) : II
Packing group (IATA) : II
Packing group (ADN) : II
Packing group (RID) : II

14.5. Environmental hazards
Dangerous for the environment : No
Marine pollutant : No
Other information : No supplementary information available
14.6. Special precautions for user

- **Overland transport**
  - Classification code (ADR): C1
  - Limited quantities (ADR): 1L
  - Excepted quantities (ADR): E2
  - Packing instructions (ADR): P001, IBC02
  - Special packing provisions (ADR): PP81, B15
  - Mixed packing provisions (ADR): MP15
  - Portable tank and bulk container instructions (ADR): T8
  - Portable tank and bulk container special provisions (ADR): TP2
  - Tank code (ADR): L4BN
  - Vehicle for tank carriage: AT
  - Transport category (ADR): 2
  - Hazard identification number (Kemler No.): 80
  - Orange plates:

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>80</td>
<td></td>
</tr>
<tr>
<td>2031</td>
<td></td>
</tr>
</tbody>
</table>

  - Tunnel restriction code (ADR): E
  - EAC code: 2P
  - APP code: B

- **Transport by sea**
  - Packing instructions (IMDG): P001
  - Special packing provisions (IMDG): PP81
  - IBC packing instructions (IMDG): IBC02
  - IBC special provisions (IMDG): B15, B20
  - Tank instructions (IMDG): T8
  - Tank special provisions (IMDG): TP2
  - EmS-No. (Fire): F-A
  - EmS-No. (Spillage): S-B
  - Stowage category (IMDG): D
  - Segregation (IMDG): SG6, SG16, SG17, SG19
  - Properties and observations (IMDG): Colourless liquid. Oxidant; may cause fire in contact with organic materials such as wood, cotton or straw, evolving highly toxic gases (brown fumes). Highly corrosive to most metals. Causes severe burns to skin, eyes and mucous membranes.

- **Air transport**
  - PCA Excepted quantities (IATA): E0
  - PCA Limited quantities (IATA): Forbidden
  - PCA limited quantity max net quantity (IATA): Forbidden
  - PCA packing instructions (IATA): Forbidden
  - PCA max net quantity (IATA): Forbidden
  - CAO packing instructions (IATA): 855
  - CAO max net quantity (IATA): 30L
  - Special provisions (IATA): A212
  - ERG code (IATA): 8L

- **Inland waterway transport**
  - Classification code (ADN): C1
  - Limited quantities (ADN): 1 L
  - Excepted quantities (ADN): E2
Carriage permitted (ADN) : T
Equipment required (ADN) : PP, EP
Number of blue cones/lights (ADN) : 0

- Rail transport
Classification code (RID) : C1
Limited quantities (RID) : 1L
Excepted quantities (RID) : E2
Packing instructions (RID) : P001, IBC02
Special packing provisions (RID) : PP81, B15
Mixed packing provisions (RID) : MP15
Portable tank and bulk container instructions (RID) : T8
Portable tank and bulk container special provisions (RID) : TP2
Tank codes for RID tanks (RID) : L4BN
Transport category (RID) : 2
Colis express (express parcels) (RID) : CE6
Hazard identification number (RID) : 80

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

15.1.1. EU-Regulations
Contains no REACH substances with Annex XVII restrictions
Contains no substance on the REACH candidate list
Contains no REACH Annex XIV substances

15.1.2. National regulations

Germany
Reference to AwSV : Water hazard class (WGK) 3, Highly hazardous to water (Classification according to AwSV, Annex 1)
12th Ordinance Implementing the Federal Immission Control Act - 12.BImSchV : Is not subject of the 12. BImSchV (Hazardous Incident Ordinance)

Netherlands
SZW-lijst van kankerverwekkende stoffen : None of the components are listed
SZW-lijst van mutagene stoffen : None of the components are listed
NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Borstvoeding : None of the components are listed
NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Vruchtbaarheid : None of the components are listed
NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Ontwikkeling : None of the components are listed
Denmark
Recommendations Danish Regulation: Young people below the age of 18 years are not allowed to use the product

15.2. Chemical safety assessment
No additional information available

SECTION 16: Other information

Full text of H- and EUH-statements:

<table>
<thead>
<tr>
<th>Acute Tox. 4 (Oral)</th>
<th>Acute toxicity (oral), Category 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eye Irrit. 2</td>
<td>Serious eye damage/eye irritation, Category 2</td>
</tr>
<tr>
<td>Ox. Liq. 1</td>
<td>Oxidising Liquids, Category 1</td>
</tr>
<tr>
<td>Skin Corr. 1A</td>
<td>Skin corrosion/irritation, Category 1A</td>
</tr>
<tr>
<td>Skin Irrit. 2</td>
<td>Skin corrosion/irritation, Category 2</td>
</tr>
<tr>
<td>H271</td>
<td>May cause fire or explosion; strong oxidiser.</td>
</tr>
<tr>
<td>H302</td>
<td>Harmful if swallowed.</td>
</tr>
<tr>
<td>H314</td>
<td>Causes severe skin burns and eye damage.</td>
</tr>
<tr>
<td>H315</td>
<td>Causes skin irritation.</td>
</tr>
<tr>
<td>H319</td>
<td>Causes serious eye irritation.</td>
</tr>
</tbody>
</table>

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.