

### MATERIAL SAFETY DATA SHEET (MSDS)

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

##### 1.1. Product identifier

Product form : Substance  
:  
EC Index-No. : 603-025-00-0  
EC-No. : 203-726-8  
CAS-No. : 109-99-9  
Product code : 00306  
Formula : C4H8O

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

###### 1.2.1. Relevant identified uses

Use of the substance/mixture : Laboratory chemicals, Manufacture of substances

###### 1.2.2. Uses advised against

No additional information available

##### 1.3. Details of the supplier of the safety data sheet

SPAN LAB  
UNIT NO. 14, SKY INDUSTRIAL ESTATE, WALIV, VASAI (E)  
401208 Mumbai - INDIA  
PH: +91 9820509929  
[info@spanlab.in](mailto:info@spanlab.in) [www.spanlab.in](http://www.spanlab.in)

#### SECTION 2: Hazards identification

##### 2.1. Classification of the substance or mixture

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

Flammable liquids, H225  
Category 2  
Serious eye damage/eye H319  
irritation, Category 2  
Specific target organ H335  
toxicity — Single  
exposure, Category 3,  
Respiratory tract irritation

Full text of hazard classes and H-statements : see section 16

# TETRAHYDROFURAN AR

## Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

### Classification according to Directive 67/548/EEC [DSD] or 1999/45/EC [DPD]

F; R11

Xi; R36/37

R19

Full text of R-phrases: 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)



GHS02

GHS07

Signal word (CLP)

: Danger

Hazard statements (CLP)

: H225 - Highly flammable liquid and vapour.  
H319 - Causes serious eye irritation.  
H335 - May cause respiratory irritation.

Precautionary statements (CLP)

: P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
P261 - Avoid breathing vapours, dust, fume, gas.  
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

## 2.3. Other hazards

No additional information available

## SECTION 3: Composition/information on ingredients

### 3.1. Substances

Name : TETRAHYDROFURAN AR

CAS-No. : 109-99-9

EC-No. : 203-726-8

EC Index-No. : 603-025-00-0

Full text of R- and H-statements: see section 16

### 3.2. Mixtures

Not applicable

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### 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. Call a POISON CENTER/doctor if you feel unwell.
- First-aid measures after skin contact : Rinse skin with water/shower. Take off immediately all contaminated clothing.
- 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. Get medical advice/attention.

#### 4.2. Most important symptoms and effects, both acute and delayed

- Symptoms/effects after inhalation : May cause respiratory irritation.
- Symptoms/effects after eye contact : Causes serious eye irritation.

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

Treat symptomatically.

### SECTION 5: Firefighting measures

#### 5.1. Extinguishing media

- Suitable extinguishing media : Carbon dioxide. Dry powder. Foam. Water spray.
- Unsuitable extinguishing media : Do not use extinguishing media containing water.

#### 5.2. Special hazards arising from the substance or mixture

- Fire hazard : Highly flammable liquid and vapour.
- Explosion hazard : May form flammable/explosive vapour-air mixture. Heat may build pressure, rupturing closed containers, spreading fire and increasing risk of burns and injuries. May form explosive peroxides.

#### 5.3. Advice for firefighters

- Firefighting instructions : DO NOT fight fire when fire reaches explosives. Evacuate area.

### SECTION 6: Accidental release measures

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

- General measures : Remove ignition sources. Use special care to avoid static electric charges. No open flames. No smoking.

##### 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 : On land, sweep or shovel into suitable containers. Collect spillage.

#### 6.4. Reference to other sections

No additional information available

### SECTION 7: Handling and storage

#### 7.1. Precautions for safe handling

- Additional hazards when processed : Handle empty containers with care because residual vapours are flammable. Hazardous waste due to potential risk of explosion.

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|                               |                                                                                                                                                                                           |
|-------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Precautions for safe handling | : Do not breathe vapours. Use only non-sparking tools. Avoid contact with skin and eyes. Use only outdoors or in a well-ventilated area. Keep away from sources of ignition - No smoking. |
| Hygiene measures              | : Do not eat, drink or smoke when using this product. 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

|                        |                                                                                                                              |
|------------------------|------------------------------------------------------------------------------------------------------------------------------|
| Technical measures     | : Proper grounding procedures to avoid static electricity should be followed. Ground/bond container and receiving equipment. |
| Storage conditions     | : Keep in fireproof place. Keep container tightly closed.                                                                    |
| Incompatible products  | : Oxidizing agent.                                                                                                           |
| Incompatible materials | : Heat sources.                                                                                                              |

### 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 safety glasses                               |
| 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                                     | : Clear Colorless.  |
| Odour                                      | : ether odor.       |
| Odour threshold                            | : No data available |
| pH                                         | : 7                 |
| Relative evaporation rate (butylacetate=1) | : No data available |
| Melting point                              | : -108 °C           |
| Freezing point                             | : No data available |
| Boiling point                              | : 65 - 67 °C        |
| Flash point                                | : -17 °C            |
| Auto-ignition temperature                  | : 321 °C            |

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|                                  |                                                    |
|----------------------------------|----------------------------------------------------|
| Decomposition temperature        | : No data available                                |
| Flammability (solid, gas)        | : Flammable<br>Highly flammable liquid and vapour. |
| Vapour pressure                  | : 190.7 hPa at 20°C                                |
| Relative vapour density at 20 °C | : 2.5                                              |
| Relative density                 | : No data available                                |
| Density                          | : 0.88 g/cm <sup>3</sup>                           |
| Solubility                       | : Water: Soluble in water                          |
| Log Pow                          | : No data available                                |
| Viscosity, kinematic             | : No data available                                |
| Viscosity, dynamic               | : No data available                                |
| Explosive properties             | : May form explosive peroxides.                    |
| Oxidising properties             | : No data available                                |
| Explosive limits                 | : 0.018 - 0.118 vol %                              |

### 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

Reacts vigorously with strong oxidizers and acids.

### 10.4. Conditions to avoid

Open flame. Heat. Sparks.

### 10.5. Incompatible materials

Oxidizing agent.

### 10.6. Hazardous decomposition products

May release flammable gases. May form explosive peroxides.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

|                               |                                           |
|-------------------------------|-------------------------------------------|
| Acute toxicity                | : Not classified                          |
| Skin corrosion/irritation     | : Not classified<br>pH: 7                 |
| Serious eye damage/irritation | : Causes serious eye irritation.<br>pH: 7 |

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|                                   |                                     |
|-----------------------------------|-------------------------------------|
| Respiratory or skin sensitisation | : Not classified                    |
| Germ cell mutagenicity            | : Not classified                    |
| Carcinogenicity                   | : Not classified                    |
| Reproductive toxicity             | : Not classified                    |
| STOT-single exposure              | : May cause respiratory irritation. |
| STOT-repeated exposure            | : Not classified                    |
| Aspiration hazard                 | : Not classified                    |

### 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. |
| Additional information                     | : Handle empty containers with care because residual vapours are flammable. Hazardous waste due to potential risk of explosion.                               |

### SECTION 14: Transport information

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

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### 14.1. UN number

|               |        |
|---------------|--------|
| UN-No. (ADR)  | : 2056 |
| UN-No. (IMDG) | : 2056 |
| UN-No. (IATA) | : 2056 |
| UN-No. (ADN)  | : 2056 |
| UN-No. (RID)  | : 2056 |

### 14.2. UN proper shipping name

|                                       |                                                 |
|---------------------------------------|-------------------------------------------------|
| Proper Shipping Name (ADR)            | : TETRAHYDROFURAN                               |
| Proper Shipping Name (IMDG)           | : TETRAHYDROFURAN                               |
| Proper Shipping Name (IATA)           | : Tetrahydrofuran                               |
| Proper Shipping Name (ADN)            | : TETRAHYDROFURAN                               |
| Proper Shipping Name (RID)            | : TETRAHYDROFURAN                               |
| Transport document description (ADR)  | : UN 2056 TETRAHYDROFURAN, 3, II, (D/E)         |
| Transport document description (IMDG) | : UN 2056 TETRAHYDROFURAN, 3, II (< -18°C c.c.) |
| Transport document description (IATA) | : UN 2056 Tetrahydrofuran, 3, II                |
| Transport document description (ADN)  | : UN 2056 TETRAHYDROFURAN, 3, II                |
| Transport document description (RID)  | : UN 2056 TETRAHYDROFURAN, 3, II                |

### 14.3. Transport hazard class(es)

#### ADR

|                                  |     |
|----------------------------------|-----|
| Transport hazard class(es) (ADR) | : 3 |
| Danger labels (ADR)              | : 3 |



#### IMDG

|                                   |     |
|-----------------------------------|-----|
| Transport hazard class(es) (IMDG) | : 3 |
| Danger labels (IMDG)              | : 3 |



#### IATA

|                                   |     |
|-----------------------------------|-----|
| Transport hazard class(es) (IATA) | : 3 |
| Hazard labels (IATA)              | : 3 |



#### ADN

|                                  |     |
|----------------------------------|-----|
| Transport hazard class(es) (ADN) | : 3 |
| Danger labels (ADN)              | : 3 |

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### RID

Transport hazard class(es) (RID) : 3

Danger labels (RID) : 3



### 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) : F1

Limited quantities (ADR) : 1I

Excepted quantities (ADR) : E2

Packing instructions (ADR) : P001, IBC02, R001

Mixed packing provisions (ADR) : MP19

Portable tank and bulk container instructions (ADR) : T4

Portable tank and bulk container special provisions (ADR) : TP1

Tank code (ADR) : LGBF

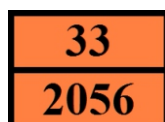
Vehicle for tank carriage : FL

Transport category (ADR) : 2

Special provisions for carriage - Operation (ADR) : S2, S20

Hazard identification number (Kemler No.) : 33

Orange plates :



Tunnel restriction code (ADR) : D/E

EAC code : •2YE

#### - Transport by sea

Packing instructions (IMDG) : P001

IBC packing instructions (IMDG) : IBC02



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|                                    |                                                                                                                             |
|------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|
| Tank instructions (IMDG)           | : T4                                                                                                                        |
| Tank special provisions (IMDG)     | : TP1                                                                                                                       |
| EmS-No. (Fire)                     | : F-E                                                                                                                       |
| EmS-No. (Spillage)                 | : S-D                                                                                                                       |
| Stowage category (IMDG)            | : B                                                                                                                         |
| Flash point (IMDG)                 | : below -18°C c.c.                                                                                                          |
| Properties and observations (IMDG) | : Colourless liquid with an ethereal odour. Flashpoint: below -18°C c.c. Explosive limits: 1.5% to 12% Miscible with water. |
| MFAG-No                            | : 127                                                                                                                       |

### - Air transport

|                                              |        |
|----------------------------------------------|--------|
| PCA Excepted quantities (IATA)               | : E2   |
| PCA Limited quantities (IATA)                | : Y341 |
| PCA limited quantity max net quantity (IATA) | : 1L   |
| PCA packing instructions (IATA)              | : 353  |
| PCA max net quantity (IATA)                  | : 5L   |
| CAO packing instructions (IATA)              | : 364  |
| CAO max net quantity (IATA)                  | : 60L  |
| ERG code (IATA)                              | : 3H   |

### - Inland waterway transport

|                                   |             |
|-----------------------------------|-------------|
| Classification code (ADN)         | : F1        |
| Limited quantities (ADN)          | : 1 L       |
| Excepted quantities (ADN)         | : E2        |
| Carriage permitted (ADN)          | : T         |
| Equipment required (ADN)          | : PP, EX, A |
| Ventilation (ADN)                 | : VE01      |
| Number of blue cones/lights (ADN) | : 1         |

### - Rail transport

|                                                           |                     |
|-----------------------------------------------------------|---------------------|
| Classification code (RID)                                 | : F1                |
| Limited quantities (RID)                                  | : 1L                |
| Excepted quantities (RID)                                 | : E2                |
| Packing instructions (RID)                                | : P001, IBC02, R001 |
| Mixed packing provisions (RID)                            | : MP19              |
| Portable tank and bulk container instructions (RID)       | : T4                |
| Portable tank and bulk container special provisions (RID) | : TP1               |
| Tank codes for RID tanks (RID)                            | : LGBF              |
| Transport category (RID)                                  | : 2                 |
| Colis express (express parcels) (RID)                     | : CE7               |
| Hazard identification number (RID)                        | : 33                |

### 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

No REACH Annex XVII restrictions

TETRAHYDROFURAN AR is not on the REACH Candidate List

TETRAHYDROFURAN AR is not on the REACH Annex XIV List

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### 15.1.2. National regulations

#### Germany

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 : The substance is not listed

SZW-lijst van mutagene stoffen : The substance is not listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Borstvoeding : The substance is not listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Vruchtbaarheid : The substance is not listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Ontwikkeling : The substance is not listed

#### Denmark

Classification remarks : Emergency management guidelines for the storage of flammable liquids must be followed

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 R-, H- and EUH-statements:

|              |                                                                                            |
|--------------|--------------------------------------------------------------------------------------------|
| Eye Irrit. 2 | Serious eye damage/eye irritation, Category 2                                              |
| Flam. Liq. 2 | Flammable liquids, Category 2                                                              |
| STOT SE 3    | Specific target organ toxicity — Single exposure, Category 3, Respiratory tract irritation |
| H225         | Highly flammable liquid and vapour.                                                        |
| H319         | Causes serious eye irritation.                                                             |
| H335         | May cause respiratory irritation.                                                          |
| R11          | Highly flammable                                                                           |
| R19          | May form explosive peroxides                                                               |
| R36/37       | Irritating to eyes and respiratory system                                                  |
| F            | Highly flammable                                                                           |
| Xi           | Irritant                                                                                   |

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*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*