

1,3-Dioxolane Technical Grade

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Date of issue: 06/03/2013

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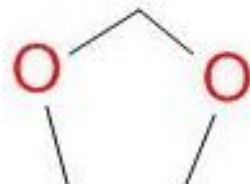
Supersedes: 09/10/2015

Version: 3.0

SECTION 1: Identification

1.1. Identification

| | |
|--------------------|---------------------------------|
| Product form | : Substance |
| Trade name | : 1,3-Dioxolane Technical Grade |
| Chemical name | : 1,3-dioxolane |
| IUPAC name | : 1,3-dioxacyclopentane |
| CAS N° | : 646-06-0 |
| Product code | : 1302 |
| Formula | : C9H10O2 |
| Chemical structure | : |



| | |
|----------|-------------------------|
| Synonyms | : 1,3-dioxacyclopentane |
|----------|-------------------------|

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

| | |
|------------------------------|---|
| Use of the substance/mixture | : Industrial uses, Professional uses Consumer uses |
|------------------------------|---|

1.3. Details of the supplier of the safety data sheet

Manufacturer

LAMBIOTTE & Cie S.A.
Grand Rue 79
Marbehan, 6724 - Belgium
T +32(0)63410080 - F +32(0)63411698
sds@lambiotte.com - www.lambiotte.com

Importer/Distributor

HOLLAND APPLIED TECHNOLOGIES
7050 High Grove Blvd.
Burr Ridge, IL 60527 - USA
Direct (630)794-5501 - Fax (630)325-5161
ray.zwiebel@hollandapt.com

1.4. Emergency telephone number

| | |
|------------------|----------------------------|
| Emergency number | : (800)424-9300 (CHEMTREC) |
|------------------|----------------------------|

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

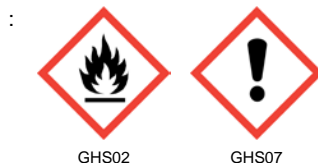
GHS-US classification

| | |
|--|------|
| Flammable liquids, Category 2 | H225 |
| Serious eye damage/eye irritation, Category 2A | H319 |
| Full text of H statements : see section 16 | |

2.2. Label elements

GHS-US labelling

Hazard pictograms (GHS-US)



| | |
|-----------------------------------|--|
| Signal word (GHS-US) | : Danger |
| Hazard statements (GHS-US) | : H225 - Highly flammable liquid and vapour H319 - Causes serious eye irritation |
| Precautionary statements (GHS-US) | : P210 - Keep away from open flames, sparks. - No smoking P240 - Ground/bond container and receiving equipment P241 - Use explosion-proof electrical equipment P280 - Wear protective gloves, eye protection P303+P361+P353 - If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact |

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lenses, if present and easy to do. Continue rinsing
P337+P313 - If eye irritation persists: Get medical advice/attention
P501 - Dispose of contents/container to Drainingpoints

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/information on ingredients

3.1. Substance

Substance type : Mono-constituent
Name : 1,3-Dioxolane Technical Grade
CAS N° : 646-06-0

| Name | Product identifier | % | GHS-US classification |
|---------------|--------------------|-------|---|
| 1,3-dioxolane | (CAS N°) 646-06-0 | >= 90 | Flam. Liq. 2, H225 Eye Irrit. 2A, H319 |
| AQUA | (CAS N°) 7732-18-5 | <= 7 | Not classified |

Full text of H-statements: see section 16

3.2. Mixture

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general : Take victim to fresh air, in a quiet place and if necessary take medical advice.
First-aid measures after inhalation : Obtain medical attention if breathing difficulty persists.
First-aid measures after skin contact : Wash skin thoroughly with mild soap and water.
First-aid measures after eye contact : Obtain emergency medical attention if pain, blinking, tears or redness persist.
First-aid measures after ingestion : If a large quantity is swallowed, immediately administer lukewarm water (1/2 litre) only if victim is completely conscious/alert and induce vomiting.

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

No additional information available

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

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Foam. AFFF. Water spray.
Unsuitable extinguishing media : Do not use a heavy water stream. Dry powder.

5.2. Special hazards arising from the substance or mixture

Fire hazard : Highly flammable.
Explosion hazard : Not applicable.
Reactivity : Strong acids and oxidants.

5.3. Advice for firefighters

Precautionary measures fire : No naked flames, sparks, and do not smoke.
Firefighting instructions : Do not enter fire area without proper protective equipment, including respiratory protection.
Protection during firefighting : Use water spray or fog for cooling exposed containers.
Other information : Exercise caution when fighting any chemical fire.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : No smoking.

6.1.1. For non-emergency personnel

Protective equipment : Equip cleanup crew with proper protection.
Emergency procedures : Keep public away.

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6.1.2. For emergency responders

No additional information available

6.2. Environmental precautions

Clean up any spills as soon as possible, using an absorbent material to collect it. Prevent entry to sewers and public waters.

6.3. Methods and material for containment and cleaning up

For containment : Use suitable disposal containers.
Methods for cleaning up : Clean up any spills as soon as possible, using an absorbent material to collect it.

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 : No open flames. No smoking.
Precautions for safe handling : Ground well. . Use special care to avoid static electric charges.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Provide local exhaust or general room ventilation to minimize mist and/or vapour concentrations.
Storage conditions : Keep container closed when not in use.
Incompatible products : Strong acids and oxidants.
Incompatible materials : Heat sources.
Storage temperature : -30 / 40 °C

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

1,3-dioxolane (646-06-0)

Not applicable

8.2. Exposure controls

Materials for protective clothing : Non-static creating clothing and conductive shoes should be worn.
Hand protection : In case of repeated or prolonged contact wear gloves.
Eye protection : Safety glasses.
Skin and body protection : Wear suitable protective clothing.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Liquid
Appearance : Clear.
Colour : Colourless
Odour : characteristic
Odour threshold : No data available
pH : No data available
pH solution : Not applicable
Melting point : No data available
Freezing point : - 95 °C
Boiling point : 76 °C (OECD103)
Flash point : <= 2,5 °C (ASTM92)
Relative evaporation rate (butylacetate=1) : 0,29
Flammability (solid, gas) : No data available
Explosive limits : No data available
Explosive properties : No data available
Oxidising properties : No data available
Vapour pressure : 101 hPa (OECD 104)

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| | |
|----------------------------------|---------------------------------|
| Relative density | : 1,06 |
| Relative vapour density at 20 °C | : No data available |
| Density | : 1,06 g/m ³ (20°C) |
| Molecular mass | : 74,08 g/mol |
| Solubility | : Water: g/l completely soluble |
| Log Pow | : - 0,37 (20°C) |
| Auto-ignition temperature | : 250 °C (DIN51794) |
| Decomposition temperature | : No data available |
| Viscosity | : No data available |
| Viscosity, kinematic | : 9,43 mm ² /s 20°C |
| Viscosity, dynamic | : < 10 mPa.s 20°C (OECD114) |

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

Strong acids and oxidants.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

May form flammable vapour-air mixture.

10.4. Conditions to avoid

No flames, no sparks. Eliminate all sources of ignition. Overheating.

10.5. Incompatible materials

Strong acids and oxidants.

10.6. Hazardous decomposition products

Stable under normal conditions.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified.

| 1,3-Dioxolane Technical Grade (646-06-0) | |
|--|---------------------------|
| LD50 oral rat | >= 2000 mg/kg |
| ATE US (oral) | 2000,000 mg/kg bodyweight |

| 1,3-dioxolane (646-06-0) | |
|--------------------------|---------------|
| LD50 oral rat | >= 2000 mg/kg |

| | |
|-----------------------------------|----------------------------------|
| Skin corrosion/irritation | : Not classified |
| Serious eye damage/irritation | : Causes serious eye irritation. |
| Respiratory or skin sensitisation | : Not classified |
| Germ cell mutagenicity | : Not classified |
| Carcinogenicity | : Not classified |

| 1,3-Dioxolane Technical Grade (646-06-0) | |
|---|---------------------|
| NOAEL (chronic, oral, animal/male, 2 years) | 75 mg/kg bodyweight |

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|---|---------------------|
| NOAEL (chronic, oral, animal/male, 2 years) | 75 mg/kg bodyweight |

| | |
|--|------------------|
| Reproductive toxicity | : Not classified |
| Specific target organ toxicity (single exposure) | : Not classified |

Specific target organ toxicity (repeated exposure) : Not classified

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| Methylal (109-87-5) | |
|--|------------------|
| LOAEL (inhalation, rat, vapour, 90 days) | 1000 mg/l/6h/day |
| NOAEL (inhalation, rat, vapour, 90 days) | 2000 mg/l/6h/day |

Aspiration hazard : Not classified

SECTION 12: Ecological information

12.1. Toxicity

| 1,3-Dioxolane Technical Grade (646-06-0) | |
|---|------------|
| LC50 fish 1 | 95,4 mg/l |
| EC50 Daphnia 1 | 772 mg/l |
| ErC50 (algae) | 877 mg/l |
| NOEC chronic fish | 546,3 mg/l |
| NOEC chronic crustacea | 197,4 mg/l |
| NOEC chronic algae | 877 mg/l |

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|---------------------------------|------------|
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| EC50 Daphnia 1 | 772 mg/l |
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| NOEC chronic fish | 546,3 mg/l |
| NOEC chronic crustacea | 197,4 mg/l |
| NOEC chronic algae | 877 mg/l |

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

| 1,3-Dioxolane Technical Grade (646-06-0) | |
|---|---------------|
| Log Pow | - 0,37 (20°C) |

| 1,3-dioxolane (646-06-0) | |
|---------------------------------|---------------|
| Log Pow | - 0,37 (20°C) |

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

Effect on the global warming : No known ecological damage caused by this product.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Regional legislation (waste) : Disposal must be done according to official regulations.

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Transport document description : UN1166 Dioxolane, 3, II

UN-No.(DOT) : UN1166

Proper Shipping Name (DOT) : Dioxolane

Class (DOT) : 3 - Class 3 - Flammable and combustible liquid 49 CFR 173.120

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Hazard labels (DOT) : 3 - Flammable liquid



Packing group (DOT) : II - Medium Danger
DOT Packaging Non Bulk (49 CFR 173.xxx) : 202
DOT Packaging Bulk (49 CFR 173.xxx) : 242
DOT Special Provisions (49 CFR 172.102) : IB2 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50 C (1.1 bar at 122 F), or 130 kPa at 55 C (1.3 bar at 131 F) are authorized
T4 - 2.65 178.274(d)(2) Normal..... 178.275(d)(3)
TP1 - The maximum degree of filling must not exceed the degree of filling determined by the following: Degree of filling = $97 / (1 + a (tr - tf))$ Where: tr is the maximum mean bulk temperature during transport, and tf is the temperature in degrees celsius of the liquid during filling
DOT Packaging Exceptions (49 CFR 173.xxx) : 150
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27) : 5 L
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) : 60 L
DOT Vessel Stowage Location : B - (i) The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel carrying a number of passengers limited to not more than the larger of 25 passengers, or one passenger per each 3 m of overall vessel length; and (ii) "On deck only" on passenger vessels in which the number of passengers specified in paragraph (k)(2)(i) of this section is exceeded
DOT Vessel Stowage Other : 40 - Stow "clear of living quarters"
Emergency Response Guide (ERG) Number : 127
Other information : No supplementary information available.

TDG

No additional information available

Transport by sea

UN-No. (IMDG) : 1166
Proper Shipping Name (IMDG) : DIOXOLANE
Class (IMDG) : 3 - Flammable liquids
Packing group (IMDG) : II - substances presenting medium danger
EmS-No. (1) : F-E S-D

Air transport

UN-No. (IATA) : 1166
Proper Shipping Name (IATA) : Dioxolane
Class (IATA) : 3 - Flammable Liquids
Packing group (IATA) : II - Medium Danger

SECTION 15: Regulatory information

15.1. US Federal regulations

1,3-dioxolane (646-06-0)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2. International regulations

CANADA

No additional information available

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EU-Regulations

1,3-Dioxolane Ultra Pure (646-06-0)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)- Directive 79/831/EEC, sixth Amendment of Directive 67/548/EEC (dangerous substances)

National regulations

1,3-Dioxolane Ultra Pure (646-06-0)

Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
Listed on the Korean ECL (Existing Chemicals List)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)

15.3. US State regulations

No additional information available

SECTION 16: Other information

Revision date : 02/11/2016

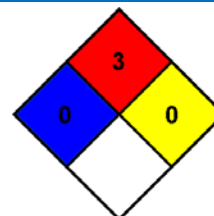
Full text of H-statements:

| | |
|------|------------------------------------|
| H225 | Highly flammable liquid and vapour |
| H319 | Causes serious eye irritation |

NFPA health hazard : 0 - Exposure under fire conditions would offer no hazard beyond that of ordinary combustible materials.

NFPA fire hazard : 3 - Liquids and solids that can be ignited under almost all ambient conditions.

NFPA reactivity : 0 - Normally stable, even under fire exposure conditions, and are not reactive with water.



SDS US (GHS HazCom 2012)

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