# HYDRANAL™Titrant 2

34811-2.5L

Version 1.10 Revision Date 06.11.2025

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

### 1.1. Product identifier

| | | |
|---|---|---|
| Product name | : | HYDRANAL™Titrant 2 |
| SDS-number | : | 000000020614 |
| Type of product | : | Mixture |
| Remarks | : | SDS according to Art. 31 of Regulation (EC) 1907/2006. |

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

| | | |
|---|---|---|
| Use of the Substance/Mixture | : | Laboratory chemicals |
| Uses advised against | : | none |

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

| | | | |
|---|---|---|---|
| Company | : | Honeywell Specialty Chemicals Seelze GmbH<br>Wunstorfer Straße 40<br>30926 Seelze<br>Germany | Solstice Advanced Materials US, Inc.<br>115 Tabor Road<br>Morris Plains, NJ 07950-2546<br>USA |
| Telephone | : | (49) 5137-999 0 | |
| For further information, please contact: | : | SafetyDataSheet@solstice.com | |

### 1.4. Emergency telephone number

| | | |
|---|---|---|
| Emergency telephone number | : | +1-703-527-3887 (ChemTrec-Transport)<br>+1 303-739-1378 (Medical) |
| | : | Poison Control Center:<br>United Kingdom: (+44) 844 892 0111 |

## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

**REGULATION (EC) No 1272/2008**

Flammable liquids Category 2
H225 Highly flammable liquid and vapour.
Acute toxicity Category 3 - Oral
H301 Toxic if swallowed.
Acute toxicity Category 3 - Inhalation
H331 Toxic if inhaled.
Acute toxicity Category 3 - Dermal
H311 Toxic in contact with skin.
Specific target organ toxicity - single exposure Category 1
H370 Causes damage to organs.
Specific target organ toxicity - repeated exposure Category 2
H373 May cause damage to organs through prolonged or repeated exposure.

### 2.2. Label elements

**REGULATION (EC) No 1272/2008**

Hazard pictograms :



Signal word : Danger

| | | |
|---|---|---|
| Hazard statements : | H225 | Highly flammable liquid and vapour. |
| | H301 + H311 + H331 | Toxic if swallowed, in contact with skin or if inhaled. |
| | H370 | Causes damage to organs. |
| | H373 | May cause damage to organs through prolonged or repeated exposure. |
| Precautionary statements : | P260 | Do not breathe dust/ fume/ gas/ mist/ vapours/ spray. |
| | P280 | Wear protective gloves/protective clothing/eye protection/face protection. |
| | P284 | In case of inadequate ventilation wear respiratory protection. |
| | P301 + P330 + P331 | IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. |
| | P302 + P352 | IF ON SKIN: Wash with plenty of water. |
| | P304 + P340 | IF INHALED: Remove person to fresh air and keep comfortable for breathing. |
| | P308 + P313 | IF exposed or concerned: Get medical advice/ attention. |

Hazardous components which must be listed on the label : methanol
iodine

### 2.3. Other hazards

Do not breathe vapours or spray mist. The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher. This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher. Product does not contain substances that are persistent, mobile, and toxic (PMT/vPvM) at levels of 0.1 % or higher.

## SECTION 3: Composition/information on ingredients

### 3.1. Substances

Not applicable

### 3.2. Mixtures

| Chemical name | CAS-No.<br>Index-No.<br>EC-No. | Classification 1272/2008 | Concentration | Remarks |
|---|---|---|---|---|
| methanol | 67-56-1<br>603-001-00-X<br>200-659-6 | Flam. Liq. 2; H225<br>Acute Tox. 3; H331; Inhalation<br>Acute Tox. 3; H311; Dermal<br>Acute Tox. 3; H301; Oral<br>STOT SE 1; H370 | >= 90 % - < 100 % | STOT SE 1; H370:>= 10 %<br>STOT SE 2; H371:3 - < 10 %<br>STOT SE 1; H370:>= 10 %<br>STOT SE 2; H371:3 - < 10 % |
| iodine | 7553-56-2<br>053-001-00-3<br>231-442-4 | Acute Tox. 4; H302; Oral<br>Acute Tox. 4; H332; Inhalation<br>Acute Tox. 4; H312; Dermal<br>Skin Irrit. 2; H315<br>Eye Irrit. 2; H319<br>STOT SE 3; H335; Respiratory system<br>STOT RE 1; H372<br>Aquatic Acute 1; H400 | >= 1 % - < 10 % | |

Remaining components of this product are non-hazardous and/or are present at concentrations below reportable limits.

Occupational Exposure Limit(s), if available, are listed in Section 8.
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 aider needs to protect himself. Move out of dangerous area. Take off all contaminated clothing immediately. Show this safety data sheet to the doctor in attendance.

*Inhalation:*
Call a physician immediately. Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Use oxygen as required, provided a qualified operator is present.

*Skin contact:*
Wash off immediately with plenty of water for at least 15 minutes. Take off contaminated clothing and shoes immediately. Wash contaminated clothing before re-use. Call a physician.

*Eye contact:*
Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Call a physician.

*Ingestion:*
Call a physician immediately. Do NOT induce vomiting. Immediate medical attention is required. Never give anything by mouth to an unconscious person.

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

No data available

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

Treat symptomatically.

See Section 11 for more detailed information on health effects and symptoms. :

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

*Suitable extinguishing media:*
Water spray
Alcohol-resistant foam
Carbon dioxide (CO2)
Dry powder

*Extinguishing media which shall not be used for safety reasons:*
Do not use a solid water stream as it may scatter and spread fire.

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

Flammable.
Vapours may form explosive mixtures with air.
Vapours are heavier than air and may spread along floors.
Vapors may travel to areas away from work site before igniting/flashing back to vapor source.
In case of fire hazardous decomposition products may be produced such as:
Carbon monoxide
Carbon dioxide (CO2)
Formaldehyde

### 5.3. Advice for firefighters

Wear self-contained breathing apparatus and protective suit.
Use water spray to cool unopened containers.Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

## SECTION 6: Accidental release measures

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

Ensure adequate ventilation. Remove all sources of ignition. Wear personal protective equipment.
Unprotected persons must be kept away.

### 6.2. Environmental precautions

Do not flush into surface water or sanitary sewer system.

### 6.3. Methods and materials for containment and cleaning up

Use explosion-proof equipment.
Soak up with inert absorbent material.
Pick for disposal in tightly closed containers
Personal protection through wearing a tightly closed chemical protection suit and a self-contained breathing apparatus.
Use only non-sparking tools.

### 6.4. Reference to other sections

For personal protection see section 8.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

*Advice on safe handling:*
Wear personal protective equipment. Use only in well-ventilated areas.

*Advice on protection against fire and explosion:*
Keep product and empty container away from heat and sources of ignition. No smoking. Take precautionary measures against static discharges. Vapours may form explosive mixtures with air.

*Hygiene measures:*
Separate rooms are required for washing, showering and changing clothes. When using, do not eat, drink or smoke. Keep working clothes separately. Wash hands before breaks and at the end of workday. When using do not eat or drink.

### 7.2. Conditions for safe storage, including any incompatibilities

*Requirements for storage areas and containers:*
Keep only in the original container, tightly closed, in a well ventilated place. Store at room temperature. (Ambient temperature: > 0 < 35°C) Protect from atmospheric moisture and water.

### 7.3. Specific end use(s)

no additional data available

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

***Occupational exposure limits:***

| Components | Basis / Value type | Value / Form of exposure | Exceeding Factor | Remarks |
|---|---|---|---|---|
| methanol | EU ELV TWA | 260 mg/m3 200 ppm | | Indicative |
| methanol | EH40 WEL STEL | 333 mg/m3 250 ppm | 15 minutes | |
| methanol | EH40 WEL SKIN_DES | | | Can be absorbed through the skin. |
| methanol | EH40 WEL TWA | 266 mg/m3 200 ppm | | |
| methanol | EU ELV SKIN_DES | | | Can be absorbed through the skin. |
| iodine | EH40 WEL | | | Listed |
| iodine | EH40 WEL STEL | 1,1 mg/m3 0,1 ppm | | |

EU ELV - EU. Indicative Occupational Exposure Limit Values in Directives 91/322/EEC, 2000/39/EC, 2006/15/EC, 2009/161/EU, 2017/164/EU, as amended
TWA - Time weighted average
EH40 WEL - UK. EH40 Workplace Exposure Limits (WELs), as amended
STEL - Short term exposure limit
EH40 WEL - UK. EH40 Workplace Exposure Limits (WELs), as amended
SKIN_DES - Skin designation:
EH40 WEL - UK. EH40 Workplace Exposure Limits (WELs), as amended
-

### DNEL/ PNEC-Values

| Component | End-use/impact | Exposure duration | Value | Exposure routes | Remarks |
|---|---|---|---|---|---|
| methanol | Consumers / Acute systemic effects | | 4mg/kg bw/d | Skin contact | |

| | | | | | |
|---|---|---|---|---|---|
| methanol | Workers / Acute systemic effects | | 20mg/kg bw/d | Skin contact | |
| methanol | Consumers / Long-term systemic effects | | 4mg/kg bw/d | Skin contact | |
| methanol | Workers / Long-term systemic effects | | 20mg/kg bw/d | Skin contact | |
| methanol | Consumers / Acute local effects | | 26 mg/m3 | Inhalation | |
| methanol | Workers / Acute local effects | | 130 mg/m3 | Inhalation | |
| methanol | Consumers / Acute systemic effects | | 26 mg/m3 | Inhalation | |
| methanol | Workers / Acute systemic effects | | 130 mg/m3 | Inhalation | |
| methanol | Consumers / Long-term local effects | | 26 mg/m3 | Inhalation | |
| methanol | Workers / Long-term local effects | | 130 mg/m3 | Inhalation | |
| methanol | Consumers / Long-term systemic effects | | 26 mg/m3 | Inhalation | |
| methanol | Workers / Long-term systemic effects | | 130 mg/m3 | Inhalation | |
| methanol | Consumers / | | 4mg/kg | Ingestion | |

| | | | | | |
|---|---|---|---|---|---|
| | Acute systemic effects | | bw/d | | |
| methanol | Consumers / Long-term systemic effects | | 4mg/kg bw/d | Ingestion | |
| iodine | Workers / Long-term systemic effects | | 0,07 mg/m3 | Inhalation | |
| iodine | Workers / Long-term systemic effects | | 0,01mg/kg bw/d | Skin contact | |

| Component | Environmental compartment / Value | Remarks |
|---|---|---|
| methanol | Sewage treatment plant: 100 mg/l | |
| methanol | Fresh water: 20,8 mg/l | Assessment factor: 10 |
| methanol | Marine water: 2,08 mg/l | Assessment factor: 100 |
| methanol | Fresh water sediment: 77 mg/kg | |
| methanol | Marine sediment: 7,7 mg/kg | |
| methanol | Soil: 100 mg/kg | Assessment factor: 100 |
| iodine | Fresh water sediment: 0,01813 mg/l | |
| iodine | Marine water: 0,06001 mg/l | |
| iodine | Sewage treatment plant: 11 mg/l | Assessment factor: 10 |
| iodine | Fresh water sediment: 3,99 mg/kg dw | |
| iodine | Marine sediment: 20,22 mg/kg dw | |
| iodine | Soil: 5,95 mg/kg dw | |

### 8.2. Exposure controls

**Occupational exposure controls**

Do not breathe vapours/dust.
Take off all contaminated clothing immediately.
The Personal Protective Equipment must be in accordance with EN standards:respirator EN 136, 140, 149; safety glasses EN 166; protective suit: EN 340, 463, 468, 943-1, 943-2; gloves EN 374, 511; safety shoes EN-ISO 20345.

**Engineering measures**
Use with local exhaust ventilation.
Electrical equipment should be protected to the appropriate standard.

**Personal protective equipment**
*Respiratory protection:*
In the case of vapour formation use a respirator with an approved filter.

*Hand protection:*
Glove material: butyl-rubber
Break through time: > 480 min
Glove thickness: 0,7 mm
Butoject® 898
Gloves must be inspected prior to use.
Replace when worn.
Remarks:Supplementary note: The specifications are based on information and tests from similar substances by analogy.
Due to varying conditions ( e.g.temperature or other strains) it must be considered that the usage of a chemical protective glove in practice may be much shorter than the permeation time determined in accordance with EN 374.
Since actual conditions of practical use often deviate from standardised conditions according EN 374 the glove manufacturer reccomends to use the chemical protective glove in practice not longer than 50% of the recomended permeation time.
Manufacturer´s directions for use should be observed because of great diversity of types .
Suitable gloves tested according EN 374 are supplied e.g. from KCL GmbH, D-36124 Eichenzell, Vertrieb@kcl.de

*Eye protection:*
Safety goggles

*Skin and body protection:*
Protective suit

**Environmental exposure controls**

Handle in accordance with local environmental regulations and good industrial practices.

## SECTION 9: Physical and chemical properties

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

| | | |
|---|---|---|
| (a) Physical state | : | liquid |
| (b) Colour | : | brown |
| (c) Odour | : | aromatic |
| (d) Melting point/freezing point | : | -98 °C |
| (e) Boiling point/boiling range | : | 65 °C<br>at 1.013 hPa |
| (g) Lower and upper explosion limit | : | Lower explosion limit<br>5,5 %(V) |
| | : | Upper explosion limit<br>31 %(V) |
| (h) Flash point | : | 11 °C |
| (i) Auto-ignition temperature | : | 450 °C |
| (j) Decomposition temperature | : | No decomposition if used as directed. |
| (k) pH | : | neutral |
| (l) Viscosity, kinematic | : | No data available |
| (m) Solubility(ies) | : | Water solubility:<br>completely miscible |
| (n) Partition coefficient: n-octanol/water | : | No data available |

| | | |
|---|---|---|
| (o) Vapour pressure | : | 128 hPa<br>at 20 °C |
| (p) Density and / or relative density | : | ca. 0,800 g/cm3<br>at 20 °C |
| (q) Relative vapour density | : | No data available |
| (r) Particle characteristics | : | No data available |

**9.2 Other Information**

| | | |
|---|---|---|
| Polymer characteristics | : | No data available |

The physical data is that of the main component.

| | | |
|---|---|---|
| Evaporation rate | : | No data available |
| Viscosity, dynamic | : | No data available |

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

Stable under recommended storage conditions.

### 10.2. Chemical stability

No decomposition if used as directed.

### 10.3. Possibility of hazardous reactions

Hazardous polymerisation does not occur.
Vapours may form explosive mixture with air.

### 10.4. Conditions to avoid

Heat, flames and sparks.

Keep away from direct sunlight.

**10.5. Incompatible materials**

Oxidizing agents

**10.6. Hazardous decomposition products**

In case of fire hazardous decomposition products may be produced such as:
Carbon monoxide
Carbon dioxide (CO2)
Formaldehyde

## SECTION 11: Toxicological information

**11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008**

***(a) Acute toxicity***

*Acute oral toxicity:*
No data available

*Acute dermal toxicity:*
No data available

*Acute inhalation toxicity:*
No data available

*Acute toxicity (other routes of administration):*
No data available

***(b) Skin corrosion/irritation:***
No data available

***(c) Serious eye damage/eye irritation:***
No data available

***(d) Respiratory or skin sensitisation:***
No data available

***(f) Carcinogenicity:***
Note: No data available

***(g) Reproductive toxicity:***

Remarks: No data available

***(h) STOT-single exposure:***
Assessment: The substance or mixture is classified as specific target organ toxicant, single exposure, category 1.

***(i) STOT - repeated exposure:***
No data available

***(j) Aspiration hazard:***
No data available

### 11.2. Information on other hazards

*Endocrine disrupting properties*
No data available

*Other information:*
No data available

## SECTION 12: Ecological information

### 12.1. Toxicity

*Toxicity to fish:*
No data available

*Toxicity to aquatic plants:*
No data available

*Toxicity to aquatic invertebrates:*
No data available

### 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. Endocrine disrupting properties

No data available

### 12.7. Other adverse effects

Do not flush into surface water or sanitary sewer system.

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

*Product:*
Dispose according to legal requirements.

*Packaging:*
Legal requirements are to be considered in regard of reuse or disposal of used packaging materials

*Further information:*
Provisions relating to waste:
EC Directive 2006/12/EC; 2008/98/EEC
Regulation No. 1013/2006
For personal protection see section 8.

## SECTION 14: Transport information

**14.1 UN number or ID number**
ADR/RID:1230 IMDG:1230 IATA:1230

**14.2 UN proper shipping name**
ADR/RID:METHANOL SOLUTION
IMDG:METHANOL SOLUTION
IATA:Methanol solution

**14.3 Transport hazard class(es)**
ADR/RID:3 (6.1) IMDG: 3 (6.1) IATA: 3 (6.1)

**14.4 Packaging group**
ADR/RID:II IMDG: II IATA: II

**14.5 Environmental hazards**
ADR/RID: no Marine pollutant: no

**14.6 Special precautions for user**
IMDG Code segregation group according chapter 3.1.4.4 : NONE,

**14.7 Maritime transport in bulk according to IMO instruments**
No data available

## SECTION 15: Regulatory information

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

| Basis | Value | Remarks |
|---|---|---|
| Directive 2012/18/EC<br>Listed in Regulation : H2: ACUTE TOXIC | **Quantity**: 50.000 kg<br>**Quantity**: 200.000 kg | |
| Directive 2012/18/EC<br>Listed in Regulation : P5c: FLAMMABLE LIQUIDS | **Quantity**: 5.000.000 kg<br>**Quantity**: 50.000.000 kg | |
| Regulation (EC) No. 1907/2006, Annex XVII | | This product contains an ingredient according to Annex XVII of the REACH Regulation1907/2006/EC. |
| Substances of very high concern (SVHC) | | This product does not contain substances of very high concern according to Regulation (EC) No Article 57 above the respective regulatory 1907/2006 (REACH), concentration limit of ≥ 0.1 % (w/w). |

**Other inventory information**

USA. List of Active Substances on the Toxic Substances Control Act (TSCA) Chemical Substances Inventory, as amended
On TSCA Inventory

Australia. Inventory of Industrial Chemicals (AIIC), as amended
On the inventory, or in compliance with the inventory

Canada. Domestic Substances List (DSL), as amended
All components of this product are on the Canadian DSL

Japan. Kashin-Hou Law List
On the inventory, or in compliance with the inventory

Korea. Existing Chemicals Inventory (KECI)
On the inventory, or in compliance with the inventory

Philippines. Inventory of Chemicals and Chemical Substances (PICCS)
On the inventory, or in compliance with the inventory

China. Inventory of Existing Chemical Substances (IECSC)
On the inventory, or in compliance with the inventory

New Zealand. Inventory of Chemicals (NZIoC), as published by ERMA New Zealand
On the inventory, or in compliance with the inventory

Taiwan Chemical Substance Inventory (TCSI)
On the inventory, or in compliance with the inventory

### 15.2 Chemical safety assessment

A Chemical Safety Assessment has not been carried out.

## SECTION 16: Other information

### Text of H-statements referred to under heading 3

| | | | |
|---|---|---|---|
| methanol | : | H225 | Highly flammable liquid and vapour. |
| | | H331 | Toxic if inhaled. |
| | | H311 | Toxic in contact with skin. |
| | | H301 | Toxic if swallowed. |
| | | H370 | Causes damage to organs. |
| iodine | : | H302 | Harmful if swallowed. |

H332 Harmful if inhaled.
H312 Harmful in contact with skin.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.
H372 Causes damage to organs through prolonged or repeated exposure.
H400 Very toxic to aquatic life.

**Further information**

All directives and regulations refer to amended versions.
Vertical lines in the left hand margin indicate a relevant amendment from the previous version.

Abbreviations:
EC European Community
CAS Chemical Abstracts Service
DNEL Derived no effect level
PNEC Predicted no effect level
vPvB Very persistent and very biaccumulative substance
PBT Persistent, bioaccmulative und toxic substance

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. Final determination of suitability of any material is the sole responsibility of the user.
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