# Dynasylan® 2201 EQ





#### 1. Identification

#### 1.1. Product identifier

Trade name Dynasylan® 2201 EQ

#### 1.2. Recommended use of the chemical and restrictions on use

Relevant applications identified

Function

For industrial use Coupling agent Crosslinking agen

Crosslinking agents Surface modifier

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

Company Evonik Corporation USA

299 Jefferson Road

Parsippany, NJ 07054-0677

**USA** 

Telephone 973-929-8000

Telefax 973-929-8040

Email address Product-Regulatory-Services@Evonik.com

### 1.4. 24 HOUR EMERGENCY TELEPHONE NUMBERS:

**CHEMTREC - US &** 

CANADA:

800-424-9300

**CHEMTREC MEXICO:** 01-800-681-9531

CHEMTREC

INTERNATIONAL:

Product Regulatory

973-929-8060

Services

#### 2. Hazards identification

## 2.1. Classification of the substance or mixture

Classification according to Regulation 29CFR 1910.1200

Flammable liquids Category 2 H225
Acute to xicity (Oral) Category 3 H301
Acute to xicity (Inhalation) Category 3 H331
Acute to xicity (Dermal) Category 3 H311
Specific target organ toxicity - single exposure Category 1 H370

+1 703-527-3887 (collect calls accepted)

#### 2.2. Label elements

Statutory basis Classification according to Regulation 29CFR 1910.1200

# hazard-defining component(s) (GHS)

Methanol

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Symbol(s)



Signal word Danger

Hazard statement H225 - Highly flammable liquid and vapour.

H301 + H311 + H331 - Toxic if swallowed, in contact with skin or if inhaled

P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

H370 - Causes damage to organs.

Precautionary statement:

Prevention P233 - Keep container tightly closed.

P240 - Ground/bond container and receiving equipment.

P241 - Use explosion-proof electrical/ventilating/lighting/equipment.

P242 - Use only non-sparking tools.

P243 - Take precautionary measures against static discharge. P260 - Do not breathe dust/fume/ gas/mist/ vapours/spray.

P264 - Wash skin thoroughly after handling.

P270 - Do not eat, drink or smoke when using this product. P271 - Use only outdoors or in a well-ventilated area.

P280 - Wear protective gloves/ eye protection/ face protection.

Precautionary statement:

Reaction

P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated

clothing. Rinse skin with water/shower.

P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position

comfortable for breathing.

P310 - Immediately call a POISON CENTER or doctor/physician.

P330 - Rinse mouth.

P363 - Wash contaminated clothing before reuse.

P370 + P378 - In case of fire: Use water spray, alcohol-resistant foam, dry chemical

or carbon dioxide to extinguish.

Precautionary statement

Storage

P403 + P233 - Store in a well-ventilated place. Keep container tightly closed.

P403 + P235 - Store in a well-ventilated place. Keep cool.

P405 - Store locked up.

Precautionary statement:

Dispos al

P501 - Dispose of contents/container to an approved waste disposal plant.

# 2.3. Other hazards

None known

## 3. Composition/information on ingredients

### Methanol > 20%

CAS-No. 67-56-1

Flammable liquids Category 2

Acute to xicity (Oral) Category 3

Acute to xicity (Inhalation) Category 3

Acute to xicity (Dermal) Category 3

Specific target organ toxicity - single exposure Category 1

#### 4. First aid measures

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#### 4.1. Description of first aid measures

#### General advice

Remove contaminated or saturated clothing immediately and follow safe disposal procedures.

#### Inhalation

If aerosol or mists are inhaled, take affected persons out into the fresh air. In case of persistent discomfort or other symptoms, consult a physician immediately.

#### Skin contact

Immediately wash skin with soap and plenty of water. Remove contaminated clothing. Obtain medical attention immediately if symptoms occur. Wash clothing before reuse.

#### Eye contact

In case of contact, immediately flush eyes with plenty of water, or if necessary, with eye rinsing solution. In case of persistent discomfort, consult an ophthalmologist.

# Ingestion

If substance is accidentally swallowed, do not induce vomiting. If fully conscious, have patient rinse mouth with plenty of water and drink plenty of water in small sips. If unconscious, ensure person is in a stable position. Never give anything by mouth to an unconscious person. Obtain immediate medical attention.

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

# Symptom s

If large amount of substance is absorbed, liberation of reaction product (methanol) can lead to symptoms of poisoning. Possible signs of poisoning include daze, dizziness, nausea, colicky abdominal pain or respiratory disturbance. Symptoms of increasing intoxication include dysopia or loss of eyesight. Treatment may include immediate gastric lavage, antidote treatment or correction of acid-base balance. Detection of the substance (methanol) is possible in blood. Evidence shows that the treatment of methanol absorption is enhanced through the administration of ethanol, which should be given to produce a blood level of at least 0.1%. Ethanol diminishes the production of toxic metabolites of methanol. Obtain treatment of allergic reaction if necessary.

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

If required, therapy of irritative effect.

Treatment:

Early endoscopy in order to assess mucosa lesions in the oesophagus and stomach which may appear. If necessary, aspirate leftover substance.

Detection of substance (Methanol) possible in:

Blood

Antidote treatment: ethanol.

### 5. Fire-fighting measures

#### 5.1. Extinguishing media

Suitable extinguishing media: water spray, foam, Carbon dioxide (CO2), dry powder

Unsuitable extinguishing media: High volume water jet

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

In case of fire cool endangered containers with water.

Closed container may rupture if strongly heated. Flammable liquid. Vapors can travel to a source of ignition and flash back. Explosive mixtures may occur at temperatures at or above the flashpoint.

#### 5.3. Advice for firefighters

Water used to extinguish fire should not enter drainage systems, soil or stretches of water.

Ensure there are sufficient retaining facilities for water used to extinguish fire.

Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

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As in any fire, wear self-contained positive-pressure breathing apparatus, (MSHA/NIOSH approved or equivalent) and full protective gear.

#### 6. Accidental release measures

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

Ensure adequate ventilation. Use personal protective equipment. Keep away from sources of ignition - No smoking.

## 6.2. Environmental precautions

Obey relevant local, state, provincial and federal laws and regulations. Do not contaminate any lakes, streams, ponds, groundwater or soil.

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

Soak up with absorbent material, e.g., sand, silica gel, acid binder, universal binder or sawdust. Place in a marked, sealable container and dispose of in accordance with existing federal, provincial, state and local regulations.

### 7. Handling and storage

#### 7.1. Precautions for safe handling

Provide good ventilation or extraction. Application, processing: Extraction at the emission source required.

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

#### Advice on protection against fire and explosion

Take precautionary measures against static charges, keep away from sources of ignition.

Explosion protection equipment required.

Danger of explosion from residual product fumes; therefore avoid spark production through cutting, grinding, or welding work in the area of the container.

When repairs of the production system are to be made (e.g. welding work), the section to be repaired must be essentially free of product.

#### Storage

Residual vapors might explode on ignition; do not apply heat, cut, drill, grind or weld on or near this container.

Comply with storage regulations and regulations prohibiting storage of hazardous substances in non-stationary containers in the same room (TRGS 510).

Keep containers tightly closed in a cool, well-ventilated place. Protect from moisture.

# 8. Exposure controls/personal protection

#### 8.1. Control parameters

Methanol		
CAS-No. Control parameters	67-56-1 200 ppm	Time Weighted Average (TWA):(ACGIH)
Control parameters	250 ppm	Short Term Exposure Limit (STEL):(ACGIH)
Control parameters	Can be absorbed through the skin.	Skin designation:(ACGIH)
Control parameters	200 ppm 260 mg/m3	Permissible exposure limit:(OSHA Z1)
Control parameters	200 ppm 260 mg/m3	Time Weighted Average (TWA) Permissible Exposure Limit (PEL):(US CA OEL)
Control parameters	1000 ppm	Ceiling Limit Value:(US CA OEL)

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Control parameters	250 ppm 325 mg/m3	Short Term Exposure Limit (STEL):(US CA OEL)
Control parameters	Can be absorbed through the skin.	Skin designation:(US CA OEL)
Control parameters	200 ppm 260 mg/m3	Time Weighted Average (TWA):(TN OEL)
Control parameters	250 ppm 325 mg/m3	Short Term Exposure Limit (STEL):(TN OEL)
Control parameters		Skin designation:(TN OEL)
	Can be absorbed through the skin.	

#### 8.2. Exposure controls

### Engineering measures

Provide good ventilation or extraction.

## Personal protective equipment

#### Respiratory protection

A respiratory protection program that meets OSHA 1910.134 and ANSI Z88.2 or applicable federal/provincial requirements must be followed whenever workplace conditions warrant respirator use. NIOSH's "Respirator Decision Logic" may be useful in determining the suitability of various types of respirators.

# **Hand protection**

Glove material for example, butyl-rubber

Material thickness 0.5 mm

Break through time >= 480 min

Glove material for example, Fluorinated rubber (Viton)

Material thickness 0.4 mm
Break through time >= 240 min

Selection of protective gloves to meet the requirements of specific workplaces.

Suitability for specific workplaces should be clarified with protective glove manufacturers.

The above mentioned hand protection is based on knowledge of the chemistry and anticipated uses of this product but it may not be appropriate for all workplaces. A hazard assessment should be conducted prior to use to ensure suitability of gloves for specific work environments and processes prior to use. Use impermeable gloves.

#### Eye protection

Use chemical splash goggles or face shield.

#### Skin and body protection

Flame retardant antistatic protective clothing.

(Solvent-resistant)

A safety shower and eye wash fountain should be readily available.

To identify additional Personal Protective Equipment (PPE) requirements, it is recommended that a hazard assessment in accordance with the OSHA PPE Standard (29CFR1910.132) be conducted before using this product.

# Hygiene measures

Avoid contact with skin, eyes and clothing. Do not inhale vapors or aerosols. Do not eat, drink, or smoke when using the product. Remove contaminated or saturated clothing.

#### 9. Physical and chemical properties

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

physical state liquid Colour colorless

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Form liquid Odour alcoholic

Odour Threshold not determined

pH not determined

Melting point/range no data available

Boiling point/range 73.4 °C (1013 hPa)

Method: OECD TG 103

Flash point 13 °C

Method: DIN EN ISO 13736

Evaporation rate not determined

Flammability (solid, gas) no data available

Lower explosion limit 5.5 %(V)

tested substance:

methanol

Upper explosion limit 44 %(V)

tested substance:

methanol

Vapour pressure ca. 120 hPa (20 °C)

Vapour density no data available

Density ca. 0.92 g/cm3 (20 °C)

Method: OECD Test Guideline 109

Water solubility partly miscible

partial decomposition by hydrolysis

Partition coefficient: n-

octanol/water

not determined

Autoignition temperature 425 °C

Method: DIN 51 794

Thermal decomposition not determined

Viscosity, dynamic not determined

### 9.2. Other information

no data available

#### 10. Stability and reactivity

## 10.1. Reactivity

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No dangerous reaction known under conditions of normal use.

#### 10.2. Chemical stability

Stable under recommended storage conditions.

#### 10.3. Possibility of hazardous reactions

Possibility of hazardous

Vapours may form explosive mixture with air.

reactions

#### 10.4. Conditions to avoid

Hydrolyses on contact with water.

In the presence of oxygen and heat, the ethanol forming during the reaction may produce acetaldehyde.

Material may form acetaldehyde when heated with inorganic pigments in the presence of air.

#### 10.5. Incompatible materials

water

#### 10.6. Hazardous decomposition products

Methanol in case of hydrolysis.

# 11. Toxicological information

## 11.1. Information on toxicological effects

Skin irritation Hazardous by absorption through the skin.

carcinogenicity assessment Contains no carcinogenic substances as defined by NTP, IARC and/or

OSHA.

Human experience Liver and kidney injuries may occur.

# Toxicological information on components

**Methanol** 

Method: Expert judgement

Method: Expert judgement

Method: Expert judgement

Skin irritation Rabbit

No skin irritation

Eye irritation Rabbit

No eye irritation

Method: OECD Test Guideline 405

Sensitization Maximization test Guinea pig: Does not cause skin sensitisation.

Method: OECD Test Guideline 406

Repeated dose toxicity Oral Monkey

LOAEL: 2340 mg/kg

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Assessment of STOT single Assessment Causes damage to organs.

exposure

Assessment of STOT repeat no evidence for hazardous properties

exposure

Risk of aspiration toxicity No evidence of aspiration toxicity

Gentoxicity in vitro

Ames test Salmonella typhimurium

negative

Method: OECD Test Guideline 471

Gentoxicity in vivo chromosomal aberration Mouse intraperitoneal (i.p.)

negative

Method: OECD Test Guideline 474

teratogenicity assessment Potential embryo-foetal toxicity and teratogenicity.

Human experience Liver and kidney injuries may occur.

Further information Material contains methanol. Harmful if inhaled or absorbed through skin;

causes damage to liver, kidney and nervous system. Causes eye, skin, nose and throat irritation. May be fatal or cause blindness if swallowed.

Cannot be made non-poisonous.

# 12. Ecological information

#### 12.1. Toxicity

No ecotoxicological studies are available on the mixture.

## 12.2. Persistence and degradability

Biodegradability No data available

## 12.3. Bioaccumulative potential

Bioaccumulation No data available

## 12.4. Mobility in soil

Mobility No data available

## 12.5. Other adverse effects

Further Information No further information available

## 13. Disposal considerations

#### 13.1. Waste treatment methods

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#### **Product**

Waste must be disposed of in accordance with federal, state and local regulations. Incineration is the preferred method. Empty containers must be handled with care due to product residue. DO NOT HEAT OR CUT THE EMPTY CONTAINER WITH ELECTRIC OR GAS TORCH.

#### Uncleaned packaging

Do not reuse empty containers and dispose of in accordance with the regulations issued by the appropriate local authorities.

If there is product residue in the emptied container, follow directions for handling on the container's label.

Incorrect disposal or reuse of this container is illegal and can be dangerous.

Other countries: observe the national regulations.

# 14. Transport information

# D.O.T. Road/Rail

4.1. UN number: UN 1230

4.2. UN proper shipping name: Methanol Solution

4.3. Transport hazard class(es): 3 (6.1)
4.4. Packing group: II

14.5. Environmental hazards (Marine --

pollutant):

14.6. Special precautions for user: Yes

ROAD: FOR USA ONLY: When shipping in, by or via USA note of the Reportable Quantity-

(CFR) Regulation!

RAIL: FOR USA ONLY: When shipping in, by or via USA note of the Reportable Quantity-

(CFR) Regulation!

Keep separate from foodstuffs, luxury foods, feedstuffs

## Air transport ICAO-TI/IATA-DGR

4.1. UN number: UN 1230

4.2. UN proper shipping name: Methanol Solution

4.3. Transport hazard class(es): 3 (6.1)
4.4. Packing group: II
14.5. Environmental hazards: --

14.6. Special precautions for user: Yes

IATA-C: Subsidiary risk: 6.1 (not to label)

FOR USA ONLY: When shipping in, by or via USA note of the Reportable Quantity-

Regulation!

IATA-P: Subsidiary risk: 6.1 (not to label)

FOR USA ONLY: When shipping in, by or via USA note of the Reportable Quantity-

Regulation!

Keep separate from foodstuffs, luxury foods, feedstuffs

# Sea transport IMDG-Code/GGVSee (Germany)

4.1. UN number: UN 1230

4.2. UN proper shipping name: METHANOL SOLUTION

4.3. Transport hazard class(es): 3 (6.1)
4.4. Packing group: II
14.5. Environmental hazards (Marine --

. Environmental mazards (manne

pollutant):

14.6. Special precautions for user: Yes

# Dynasylan® 2201 EQ





EmS: F-E,S-D

Clear of living quarters.

FOR USA ONLY: When shipping in, by or via USA note of the Reportable Quantity-Regulation!

Keep separate from foodstuffs, luxury foods, feedstuffs

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code:

for transportapproval see regulatory information

### 15. Regulatory information

#### **US Federal Regulations**

#### **OSHA**

If listed below, chemical specific standards apply to the product or components:

None listed

## Clean Air Act Section (112)

If listed below, components present at or above the de minimus level are hazardous air pollutants:

Methanol

CAS-No. 67-56-1

### **CERCLA Reportable Quantities**

If listed below, a reportable quantity (RQ) applies to the product based on the percent of the named component:

Methanol

CAS-No. 67-56-1

Reportable Quantity 10018 lbs

#### SARA Title III Section 311/312 Hazard Categories

The product meets the criteria only for the listed hazard classes:

- Acute Health Hazard
- Chronic Health Hazard
- Fire Hazard

#### SARA Title III Section 313 Reportable Substances

If listed below, components are subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372:

Methanol

CAS-No. 67-56-1

## **Toxic Substances Control Act (TSCA)**

If listed below, non-proprietary substances are subject to export notification under Section 12 (b) of TSCA:

None listed

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#### **State Regulations**

The Listing requirements of the Right to Know (RTK) legislation varies by state. All information for NJ, PA, MA and other states can be derived from the listing of hazardous and non-hazardous components in section 2 and 15 of this MSDS.

# California Proposition 65

A warning under the California Drinking Water Act is required only if listed below:

WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

Methanol

CAS-No. 67-56-1

Ethyl carbamate

CAS-No. 51-79-6

WARNING! This product contains a chemical known to the State of California to cause cancer.

Ethyl carbamate

CAS-No. 51-79-6

An employer using HMIS/NFPA labeling must through training ensure that its employees are fully aware of the hazards of the chemicals used.

# **HMIS Ratings**

Health: 2\* Flammability: 3 Physical Hazard: 1

## **NFPA Ratings**

Health: 2 Flammability: 3 Reactivity: 1

### 16. Other information

#### **Further information**

Revision date 06/01/2015

Changes since the last version are highlighted in the margin. This version replaces all previous versions.

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Legend

ACC American Chemistry Council

ACGIH American Conference of Governmental Industrial Hygenists

ACS Advisory Committee on Sustainability

ADI Acceptable Daily Intake

**ASTM** American Society for Testing and Materials

ATP Adaptation to Technical Progress

BCF Bioconcentration factor
BOD Biochemical oxygen demand

c.c. closed cup

CAO Cargo Aircraft Only

Carc Carcinogen

CAS Chemical Abstract Services

CDN Canada

CEPA Canadian Environmental Protection Act

CERCLA Comprehensive Environmental Response – Compensation and Liability Act

**CFR** Code of Federal Regulations

CMR carcinogenic-mutagenic-toxic for reproduction

COD Chemical oxygen demand

DIN German Institute for Standardization
DM EL Derived minimum effect level
DNEL Derived no effect level
DOT Department of Transportation
EC50 half maximal effective concentration
EPA Environmental Protection Agency
ErC50 Reduction of Growth Rate

ERG Emergency Response Guide Book FDA Food and Drug Administration

Globally Harmonized System of Classification and Labelling of Chemicals (GHS)

GLP Good Laboratory Practice
GMO Genetic Modified Organism
HCS Hazard Communication Standard

HMIS Hazardous Materials Identification System
IARC International Agency for Research on Cancer

IATA International Air Transport Association

IBC Intermediate Bulk Container

ICAO-TI International Civil Aviation Organization- Technical Instructions

ICCA International Council of Chemical Association

**ID** Identification number

IMDG International Maritime Dangerous Goods

IUPAC International Union of Pure and Applied Chemistry
ISO International Organization For Standardization

**LC50** 50 % Lethal Concentration

**LD50** 50 % Lethal Dose **LC50** or **EC50** 

LOA EL Low est observed adverse effect level

**LOEL** Low est observed effect level

MARPOL International Convention for the Prevention of Pollution from Ships

NFPA National Fire Protection Association
NOAEL No observed adverse effect level
NOEC no observed effect concentration

NOEL no observed effect level

o. c. open cup

OECD Organisation for Economic Cooperation and Development

**OEL** Occupational Exposure Limit

OSHA Occupational Safety and Health Administration

PBT Persistent, bioaccumulative, toxic
PEC Predicted effect concentration
PNEC Predicted no effect concentration

RQ Reportable Quantity SDS Safety Data Sheet

STOT Specific Target Organ Toxicity

**UN** United Nations

vPvB very persistent, very bioaccumulative

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voc

volatile organic compounds Workplace Hazardous Materials Information System WHMIS

WHO World Health Organization