



Drydene ThermoDynALL AI-3 Booster

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

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SECTION 1: Identification

1.1. Identification

Product form : Mixtures
Product name : Drydene Thermodynall AI-3 Booster

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

Use of the substance/mixture : Inhibitor.
Restrictions on use : No additional information available

1.3. Details of the supplier of the safety data sheet

DRYEDENE PERFORMANCE PRODUCTS, INC.
841 Nina Way, Unit 1
Warminster, PA 18974
1-877-379-3363
sds@drydene.com

1.4. Emergency telephone number

Emergency number : 1-800-424-9300
CHEMTREC (24 HOURS)

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS-US classification

Skin corrosion/irritation, Category 1B H314
Full text of H statements : see section 16

2.2. Label elements

GHS-US labelling



Hazard pictograms (GHS-US) : GHS05
Signal word (GHS-US) : Danger
Hazard statements (GHS-US) : H314 - Causes severe skin burns and eye damage
Precautionary statements (GHS-US) : P260 - Do not breathe mist, vapours
P264 - Wash hands thoroughly after handling
P280 - Wear eye protection, face protection, protective clothing, protective gloves
P301+P330+P331 - If swallowed: rinse mouth. Do NOT induce vomiting
P303+P361+P353 - If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower
P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing
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 doctor
P321 - Specific treatment (see First aid measures on this label)
P363 - Wash contaminated clothing before reuse
P405 - Store locked up
P501 - Dispose of contents/container to Collection point

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. Substances

Not applicable

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3.2. Mixtures

| Name | Product identifier | % | GHS-US classification |
|----------------|--------------------|-----------|--|
| 2-aminoethanol | (CAS-No.) 141-43-5 | 10 - < 20 | Flam. Liq. 4, H227 Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Dermal), H312 Acute Tox. 4 (Inhalation:dust,mist), H332 Skin Corr. 1B, H314 STOT SE 3, H335 |

*Chemical name, CAS number and/or exact concentration have been withheld as a trade secret

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

SECTION 4: First aid measures

4.1. Description of first aid measures

- First-aid measures general : Never give anything by mouth to an unconscious person. Get medical advice/attention if you feel unwell.
- First-aid measures after inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or doctor/physician.
- First-aid measures after skin contact : Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Immediately call a POISON CENTER or doctor/physician.
- First-aid measures after eye contact : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician.
- First-aid measures after ingestion : Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER or doctor/physician.

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

- Symptoms/effects after inhalation : May cause respiratory irritation.
- Symptoms/effects after skin contact : Causes severe skin burns and eye damage.
- Symptoms/effects after eye contact : Causes serious eye damage.

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

Treat symptomatically and supportively.

SECTION 5: Firefighting measures

5.1. Extinguishing media

- Suitable extinguishing media : Carbon dioxide. Dry chemical. Foam. Water spray.
- Unsuitable extinguishing media : Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

- Fire hazard : Burning produces irritating, toxic and noxious fumes.
- Explosion hazard : Product is not explosive.
- Reactivity : Thermal decomposition generates : Corrosive vapours.

5.3. Advice for firefighters

- Firefighting instructions : Do not allow run-off from fire fighting to enter drains or water courses.
- Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection. Use self-contained breathing apparatus.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

- General measures : Avoid all eye and skin contact and do not breathe vapour and mist.

6.1.1. For non-emergency personnel

- Protective equipment : Chemical goggles or safety glasses. Face shield. Wear suitable protective clothing and gloves.
- Emergency procedures : Evacuate unnecessary personnel.

6.1.2. For emergency responders

- Protective equipment :
- Emergency procedures :

6.2. Environmental precautions

Do not discharge into drains or the environment.

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6.3. Methods and material for containment and cleaning up

- For containment : Do not allow minor leaks or spills to accumulate on walking surfaces.
Methods for cleaning up : Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. On land, sweep or shovel into suitable containers.

6.4. Reference to other sections

Section 13: disposal information. Section 7: safe handling. Section 8: personal protective equipment.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Precautions for safe handling : Do not breathe mist, spray, vapours. Avoid contact with skin, eyes and clothing.
Hygiene measures : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Wash contaminated clothing before reuse.

7.2. Conditions for safe storage, including any incompatibilities

- Technical measures : Comply with applicable regulations.
Storage conditions : Do not store near food, foodstuffs, drugs, or potable water supplies. Keep container closed when not in use.
Incompatible products : Strong oxidizers. Strong acids. metals.
Heat and ignition sources : Keep away from heat, sparks and flame.
Prohibitions on mixed storage : Incompatible materials.
Storage area : Store in dry, cool, well-ventilated area.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

| 2-aminoethanol (141-43-5) | | |
|---------------------------|---------------------------------------|-----------------------|
| ACGIH | ACGIH TWA (mg/m ³) | 7.5 mg/m ³ |
| ACGIH | ACGIH TWA (ppm) | 3 ppm |
| ACGIH | ACGIH STEL (mg/m ³) | 15 mg/m ³ |
| ACGIH | ACGIH STEL (ppm) | 6 ppm |
| ACGIH | Remark (ACGIH) | Eye & skin irr |
| OSHA | OSHA PEL (TWA) (mg/m ³) | 6 mg/m ³ |
| OSHA | OSHA PEL (TWA) (ppm) | 3 ppm |
| IDLH | US IDLH (ppm) | 30 ppm |
| NIOSH | NIOSH REL (TWA) (mg/m ³) | 8 mg/m ³ |
| NIOSH | NIOSH REL (TWA) (ppm) | 3 ppm |
| NIOSH | NIOSH REL (STEL) (mg/m ³) | 15 mg/m ³ |
| NIOSH | NIOSH REL (STEL) (ppm) | 6 ppm |

8.2. Exposure controls

- Appropriate engineering controls : Avoid splashing. Ensure good ventilation of the work station. Emergency safety showers should be available in the immediate vicinity of any potential exposure. Eyewash stations.
Hand protection : Wear suitable gloves resistant to chemical penetration.
Eye protection : Chemical goggles or safety glasses. Face shield.
Skin and body protection : Wear suitable protective clothing. Impervious clothing.
Respiratory protection : In case of inadequate ventilation wear respiratory protection. Use an approved respirator equipped with oil/mist cartridges.

SECTION 9: Physical and Chemical properties

9.1. Information on basic physical and chemical properties

- Physical state : Liquid
Color : light yellow
Odor : mild
Odor threshold : No data available

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| | |
|--|-------------------------------------|
| pH | : 9.6 (1% in water) |
| Melting point | : No data available |
| Freezing point | : No data available |
| Boiling point | : No data available |
| Flash point | : > 100 °C PMCC |
| Relative evaporation rate (butylacetate=1) | : No data available |
| Flammability (solid, gas) | : No data available |
| Explosive limits | : No data available |
| Explosive properties | : No data available |
| Oxidising properties | : No data available |
| Vapour pressure | : No data available |
| Relative density | : 1.12 @ 25 °C |
| Relative vapour density at 20 °C | : No data available |
| Solubility | : Soluble in water. Water: 100 % |
| Log Pow | : No data available |
| Auto-ignition temperature | : No data available |
| Decomposition temperature | : No data available |
| Viscosity | : No data available |
| Viscosity, kinematic | : 670 cSt @ 40 °C |
| Viscosity, dynamic | : No data available |

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

Thermal decomposition generates : Corrosive vapours.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur.

10.4. Conditions to avoid

Heat.

10.5. Incompatible materials

Strong acids. Strong oxidizers. metals.

10.6. Hazardous decomposition products

Thermal decomposition generates : Corrosive vapours. Carbon dioxide. Carbon monoxide. Nitrogen oxides. ammonia. Isocyanates.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Likely routes of exposure : Inhalation; Skin and eye contact

Acute toxicity : Not classified

| 2-aminoethanol (141-43-5) | |
|----------------------------|---------------------------|
| LD50 oral rat | 1515 mg/kg |
| LD50 dermal rabbit | 1822 (1822 - 3451) mg/kg |
| LC50 inhalation rat (mg/l) | > 1.3 mg/l |
| ATE US (oral) | 1515.000 mg/kg bodyweight |
| ATE US (dermal) | 1822.000 mg/kg bodyweight |
| ATE US (dust,mist) | 1.500 mg/l/4h |

Skin corrosion/irritation : Causes severe skin burns and eye damage.

Serious eye damage/irritation : Not classified
(Serious eye damage, category 1, implicit)

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| | |
|--|--|
| Respiratory or skin sensitisation | : Not classified |
| Germ cell mutagenicity | : Not classified |
| Carcinogenicity | : Not classified |
| Reproductive toxicity | : Not classified |
| Specific target organ toxicity (single exposure) | : Not classified |
| Specific target organ toxicity (repeated exposure) | : Not classified |
| Aspiration hazard | : Not classified |
| Symptoms/effects after inhalation | : May cause respiratory irritation. |
| Symptoms/effects after skin contact | : Causes severe skin burns and eye damage. |
| Symptoms/effects after eye contact | : Causes serious eye damage. |

12.1. Toxicity

| 2-aminoethanol (141-43-5) | |
|---------------------------|---------------|
| LC50 fish 1 | 165 mg/l 48 h |
| EC50 Daphnia 1 | 65 mg/l 48 h |

12.2. Persistence and degradability

| Drydene ThermoDynall AI-3 Booster | |
|-----------------------------------|------------------------|
| Persistence and degradability | Not established. |
| 2-aminoethanol (141-43-5) | |
| Persistence and degradability | Readily biodegradable. |

12.3. Bioaccumulative potential

| Drydene ThermoDynall AI-3 Booster | |
|-----------------------------------|------------------|
| Bioaccumulative potential | Not established. |
| 2-aminoethanol (141-43-5) | |
| Log Pow | -1.31 |

12.4. Mobility in soil

| Drydene ThermoDynall AI-3 Booster | |
|-----------------------------------|------------------|
| Ecology - soil | Not established. |

12.5. Other adverse effects

| | |
|------------------------------|--|
| Effect on the global warming | : No known effects from this product. |
| Other information | : No additional information available. |

SECTION 13: Disposal considerations

13.1. Waste treatment methods

| | |
|---------------------------------|---|
| Sewage disposal recommendations | : Do not dispose of waste into sewer. |
| Waste disposal recommendations | : Dispose in a safe manner in accordance with local/national regulations. |
| Ecology - waste materials | : Avoid release to the environment. |

SECTION 14: Transport information

Department of Transportation (DOT)

| | |
|----------------------------------|---|
| In accordance with DOT | |
| Transport document description | : UN2491 Ethanolamine solutions, 8, III |
| UN-No.(DOT) | : UN2491 |
| Proper Shipping Name (DOT) | : Ethanolamine solutions |
| Transport hazard class(es) (DOT) | : 8 - Class 8 - Corrosive material 49 CFR 173.136 |
| Packing group (DOT) | : III - Minor Danger |

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Hazard labels (DOT) : 8 - Corrosive



DOT Packaging Non Bulk (49 CFR 173.xxx) : 203

DOT Packaging Bulk (49 CFR 173.xxx) : 241

DOT Special Provisions (49 CFR 172.102) : IB3 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1 and 31HA2, 31HB2, 31HN2, 31HD2 and 31HH2). 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, except for UN2672 (also see Special Provision IP8 in Table 2 for UN2672).

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) : 154

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 : A - The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel.

DOT Vessel Stowage Other : 52 - Stow "separated from" acids

Emergency Response Guide (ERG) Number : 153

Other information : No supplementary information available.

Transport by sea

UN-No. (IMDG) : 2491

Proper Shipping Name (IMDG) : ETHANOLAMINE SOLUTION

Class (IMDG) : 8 - Corrosive substances

Packing group (IMDG) : III - substances presenting low danger

Limited quantities (IMDG) : 5 L

Air transport

UN-No. (IATA) : 2491

Proper Shipping Name (IATA) : Ethanolamine solution

Class (IATA) : 8 - Corrosives

Packing group (IATA) : III - Minor Danger

15.1. US Federal regulations

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory

This product or mixture is not known to contain a toxic chemical or chemicals in excess of the applicable de minimis concentration as specified in 40 CFR §372.38(a) 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.

15.2. International regulations

CANADA

2-aminoethanol (141-43-5)

Listed on the Canadian DSL (Domestic Substances List) inventory.

EU-Regulations

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2-aminoethanol (141-43-5)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

National regulations

2-aminoethanol (141-43-5)

Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on Taiwan National Chemical Inventory
Listed on the Korean ECL (Existing Chemicals List)
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
Listed on the Inventory of Existing Chemical Substances Produced or Imported in China (IECSC).
Listed on the Chinese Catalog of Hazardous Chemicals.

15.3. US State regulations

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| | |
|----------------------------|--|
| State or local regulations | California Proposition 65 - This product contains, or may contain, trace quantities of a substance(s) known to the state of California to cause cancer, developmental and/or reproductive harm |
|----------------------------|--|

2-aminoethanol (141-43-5)

U.S. - New York - Right to Know List of Hazardous Substances
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Minnesota - Hazardous Substance List
U.S. - Washington - Permissible Exposure Limits - Carcinogens
U.S. - Idaho - Non-Carcinogenic Toxic Air Pollutants - Emission Levels (ELs)

SECTION 16: Other information

Revision date : 5/5/2020

Data sources : ESIS (European chemical Substances Information System; accessed at: <http://esis.jrc.ec.europa.eu/index.php?PGM=cla>.
ACGIH 2000.
European Chemicals Agency (ECHA) Registered Substances list. Accessed at <http://echa.europa.eu/>.
Krister Forsberg and S.Z. Mansdorf, "Quick Selection Guide to Chemical Protective Clothing", Fifth Edition.
National Fire Protection Association; Fire Protection Guide to Hazardous Materials; 10th edition.
OSHA 29CFR 1910.1200 Hazard Communication Standard.
TSCA Chemical Substance Inventory. Accessed at <http://www.epa.gov/oppt/existingchemicals/pubs/tscainventory/howto.html>.

Other information : None.

Full text of H-statements:

| | |
|------|---|
| H227 | Combustible liquid |
| H302 | Harmful if swallowed |
| H312 | Harmful in contact with skin |
| H314 | Causes severe skin burns and eye damage |
| H332 | Harmful if inhaled |
| H335 | May cause respiratory irritation |

Abbreviations and acronyms:

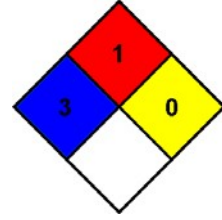
| | |
|--|---|
| | ACGIH (American Conference of Government Industrial Hygienists) |
| | ATE: Acute Toxicity Estimate |
| | CAS (Chemical Abstracts Service) number |
| | CLP: Classification, Labelling, Packaging. |
| | EC50: Environmental Concentration associated with a response by 50% of the test population. |
| | GHS: Globally Harmonized System (of Classification and Labeling of Chemicals). |
| | LD50: Lethal Dose for 50% of the test population |
| | OSHA: Occupational Safety & Health Administration |
| | STEL: Short Term Exposure Limits |
| | TSCA: Toxic Substances Control Act |
| | TWA: Time Weighted Average |

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- NFPA health hazard : 3 - Materials that, under emergency conditions, can cause serious or permanent injury.
- NFPA fire hazard : 1 - Materials that must be preheated before ignition can occur.
- NFPA reactivity : 0 - Normally stable, even under fire exposure conditions, and not reactive with water.



Indication of changes: Rev 1.1 – address update

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For more information contact your Drydene Performance Products representative.*