

SAFETY DATA SHEET

Revision date 2019-Nov-14

Revision number 2.06

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier

Product name DMPA[®]- All Grades
DMPA - REGULAR, SPECIAL, FINE
Product code 3105A
Synonyms DMPA[®]; 3-hydroxy-2-(hydroxymethyl)-2-methylpropionic acid;
dihydroxypivalic acid; 2,2-bis(hydroxymethyl) propionic acid
REACH registration number 01-2119454390-44-0001

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

Recommended use [RU] Process intermediate
Manufacture of Substances (i.e. polymers, oligomers)
Distribution and storage
Formulations
Professional Use in Laboratories
Uses advised against None known

1.3 Details of the supplier of the safety data sheet

Supplier GEO Specialty Chemicals, Inc. 2409 N. Cedar Crest Blvd. Allentown, PA 18104-9733 +1-610-433-6330 Hours: Monday-Friday 9:00-5:00 EST (Eastern Standard Time)	Only representative GEO Specialty Chemicals UK Ltd Charleston Road, Hardley, Hythe Southampton, Hampshire SO45 3ZG United Kingdom Phone: +44 (0)23 80894666 Fax No: +44 (0)23 80243113
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Responsibility Statement For further information, please contact safety-data-sheet-fp@geosc.com

1.4 Emergency telephone number

Emergency telephone 24 Hour Emergency Phone Number
GEO Specialty Chemicals UK Ltd
+44 (0)23 80891806

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

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

Serious eye damage/eye irritation	Category 2
Specific target organ toxicity (single exposure)	Category 3

2.2 Label elements

Labeling according to Regulation (EC) No. 1272/2008 [CLP]**Signal word** WARNING**Hazard statements**

H319 - Causes serious eye irritation

H335 - May cause respiratory irritation

Precautionary statements

P261 - Avoid breathing dust/fume/gas/mist/vapors/spray

P280 - Wear protective gloves and eye/face protection

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

P312 - Call a POISON CENTER or doctor if you feel unwell

P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

P337 + P313 - If eye irritation persists: Get medical advice/attention

Hazard components for labeling • Dimethylolpropionic Acid**2.3 Other Information**

None known

3. COMPOSITION/INFORMATION ON INGREDIENTS**3.1 Substances**

Component	EU EINECS	weight-%	Classification according to Regulation (EC) No. 1272/2008 [CLP]	(REACH) Regulation (EC 1907/2006)
Dimethylolpropionic Acid 4767-03-7	225-306-3	95 - 100%	Eye Irrit. 2 (H319) STOT SE 3 (H335)	Registration Number 01-2119454390-44-0001

For the full text of the H-Statements mentioned in this Section, see Section 16.**3.2 Mixtures**

Not applicable

4. FIRST AID MEASURES**4.1 Description of first aid measures****Eye contact**

Remove contact lenses, if worn. Immediately flush with plenty of water for at least 20 minutes, holding eyelids apart to ensure flushing of the entire surface. Washing within one minute is essential to achieve maximum effectiveness. If eye irritation persists: Get medical advice/attention.

Skin contact

Immediately flush skin with plenty of soap and water for at least 15 minutes. Remove contaminated clothing and shoes. Wash contaminated clothing before reuse. If skin irritation occurs: Get medical advice/attention.

Ingestion

Do NOT induce vomiting. If vomiting should occur spontaneously, keep airway clear. Never give anything by mouth to an

unconscious person. Get medical attention.

Inhalation

Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Seek immediate medical attention/advice.

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

No information available.

Aggravated Medical Conditions

Eye and lung conditions.

4.3 Indication of any immediate medical attention and special treatment needed**Note to physicians**

Treat symptomatically.

5. FIRE-FIGHTING MEASURES

5.1 Extinguishing media**Suitable extinguishing media**

Water mist. Carbon dioxide (CO₂). Foam. Dry chemical.

Extinguishing media which must not be used for safety reasons

No information available.

5.2 Special hazards arising from the substance or mixture**Special Hazard**

Avoid creating explosive concentrations of dust. Risk of dust explosion in fine crystalline powder form.

5.3 Advice for firefighters**Special protective equipment for firefighters**

Electrical grounding of equipment is required when handling powder to prevent possible dust explosion. Full protective clothing and approved self-contained breathing apparatus required for firefighting personnel.

Firefighting measures

Cool exposed containers with water spray after extinguishing fire.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures**Personal precautions**

Wear suitable protective clothing and gloves.

6.2 Environmental precautions**Environmental precautions**

Do not allow to enter sewer or surface and subsurface waters.

6.3 Methods and material for containment and cleaning up**Methods for cleaning up**

Stop leaks. Clear spills immediately. Contain large spill and remove using an appropriately lined vacuum truck. Soak up small spills with inert absorbent material and place in a labeled waste container for disposal. Spills of solution are extremely slippery so all residue must be removed promptly. Remove all sources of ignition. Non-sparking tools should be used. Ventilate the

area. Shovel into labeled waste container for reuse or disposal. Avoid generating dust; fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard. Wet the material with water to limit dust emission or explosion risk.

6.4 Reference to other sections

See Section 12 for additional Ecological Information

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Advice on safe handling

Keep container closed when not in use

Avoid generation of dust. Avoid breathing dust. Use only in well-ventilated areas. Use respiratory protection where dust may be generated.

Avoid contact with eyes, skin and clothing. Wash thoroughly after handling

Do not take internally

Conveying and processing equipment should be spark proof, electrically bonded and grounded. Keep away from open flames, hot surfaces and sources of ignition

Comply with Directive 94/9/EC concerning equipment and protective systems intended for use in potentially explosive atmospheres and, Directive 1999/92/EC regarding minimum requirements for improving the safety and health protection of workers potentially at risk from explosive atmospheres.

FOR INDUSTRIAL USE ONLY.

7.2 Conditions for safe storage, including any incompatibilities

Technical measures and storage conditions

Store at 15 - 25° C (59 - 77° F) in original closed containers.

Keep away from open flames, hot surfaces and sources of ignition

Conveying and processing equipment should be spark proof, electrically bonded and grounded.

Dust must be collected and disposed of carefully.

7.3 Specific end use(s)

Specific use(s)

Not applicable

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Occupational exposure limit value

Component	European Union	United Kingdom	Spain	Germany
Dimethylolpropionic Acid 4767-03-7	NAV	NAV	NAV	NAV

Biological limit values

Component	European Union	United Kingdom	Spain	Germany
Dimethylolpropionic Acid 4767-03-7	NAV	NAV	NAV	NAV

Legend

NAV - Not available

Derived No Effect Level (DNEL)						
Name on List	End User	Exposure route	Health Effects	Exposure Time	Values	Remarks
2,2-bis(hydroxymethyl)propionic acid (4767-03-7)	consumers	Oral	Acute effects, systemic		1 mg/kg bw/d	
2,2-bis(hydroxymethyl)	consumers	Oral	Chronic effects, systemic		0.2 mg/kg	

propionic acid (4767-03-7)					bw/d	
2,2-bis(hydroxymethyl)propionic acid (4767-03-7)	consumers	Dermal	Acute effects, systemic		1 mg/kg bw/d	
2,2-bis(hydroxymethyl)propionic acid (4767-03-7)	consumers	Dermal	Chronic effects, systemic		0.2 mg/kg bw/d	
2,2-bis(hydroxymethyl)propionic acid (4767-03-7)	consumers	Inhalation	Acute effects, systemic		1.8 mg/m ³	
2,2-bis(hydroxymethyl)propionic acid (4767-03-7)	consumers	Inhalation	Chronic effects, systemic		0.3 mg/m ³	

Predicted No Effect Concentration (PNEC)				
Name on List	Environmental Compartment	Exposure Time	Values	Remarks
2,2-bis(hydroxymethyl)propionic acid (4767-03-7)	Fresh water		0.1 mg/L	
2,2-bis(hydroxymethyl)propionic acid (4767-03-7)	Marine water		0.01 mg/L	
2,2-bis(hydroxymethyl)propionic acid (4767-03-7)			10 mg/L	PNEC STP
2,2-bis(hydroxymethyl)propionic acid (4767-03-7)			1 mg/L	PNEC Aqua (intermittent release)

Risk management measures

Further information concerning special risk management measures: see annex of this safety data sheet (exposure scenarios)

8.2 Exposure controls**Personal Protective Equipment****Eye/face Protection**

Wear chemical splash goggles and face shield (when eye and face contact is possible due to splashing or spraying of material).

Hand Protection

Appropriate chemical resistant gloves should be worn: Polyvinylchloride, Nitrile rubber, Chloroprene, CR

Skin and body protection

Wear suitable protective clothing.

Respiratory protection

Appropriate respiratory protection shall be worn when applied engineering controls are not adequate to protect against inhalation exposure above the listed occupational exposure limits.

Other personal protection data

Eyewash fountains and safety showers must be easily accessible.

Ingredients with limit values that require monitoring at the workplace

Inhalable dust: 10 mg/m³ 8-hour TWA

Respirable dust: 4 mg/m³ 8-hour TWA

Hygiene measures

Handle in accordance with good industrial hygiene and safety practice.

Environmental exposure controls

No information available.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Physical state	dry, free flowing granules
Color	off-white
Appearance	No information available
Odor	odorless
Odor threshold	No information available

<u>Property</u>	<u>Values</u>	<u>Remarks</u>
pH	2.6	50 g/L @ 20 °C
Melting / freezing point	166 °C / 330.8 °F	No information available
Boiling point / boiling range	182 °C / 359.6 °F	No information available
Flash point	No information available	No information available
Evaporation rate	< 1	No information available
Flammability (solid, gas)	No information available	No information available
Flammability Limit in Air		
Upper flammability limit	No information available	No information available
Lower flammability limit	No information available	No information available
Vapor pressure	< 1 mm Hg	No information available
Vapor density	> 1	No information available
Specific gravity	No information available	No information available
Solubility (water)	101 g/l	No information available
Solubility in other solvents	soluble in alcohols	No information available
Partition coefficient: n-octanol/water	-1.1 log Kow	No information available
Autoignition temperature	> 400 °C / > 752 °F	No information available
Decomposition temperature	No information available	No information available
Kinematic viscosity	No information available	No information available
Dynamic viscosity	No information available	No information available
Density	No information available	No information available

9.2 Other information

Bulk Density	52.4 lb/ft³
Explosive properties	Not an explosive. May form explosive mixtures with air.
Oxidizing properties	The substance or mixture is not classified as oxidizing.
Softening point	No information available
Molecular weight	134.13 g/mol
Volatile Organic Compound (VOC) content, wt.%	No information available
Percent Volatile, wt.%	No information available

10. STABILITY AND REACTIVITY

10.1 Reactivity

Reactivity

No information available.

10.2 Chemical stability

Chemical stability

Stable under normal conditions.

10.3 Possibility of hazardous reactions

Hazardous polymerization

Not anticipated under normal or recommended handling and storage conditions.

10.4 Conditions to avoid

Conditions to avoid

Risk for dust explosion. Avoid handling which can create static electrical discharges.

10.5 Incompatible materials

Materials to avoid

Oxidizing agents.

10.6 Hazardous decomposition products

Hazardous decomposition products

Carbon monoxide. Carbon dioxide.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute health hazard

Eye contact

Causes eye irritation.

Skin contact

This product is not considered to be a skin irritant.

Ingestion

Considered slightly toxic.

Inhalation

Dust irritating to respiratory tract.

Acute toxicity

Oral LD50

>2000 mg/kg (rats)

Method: OECD Test No. 423: Acute Oral toxicity - Acute Toxic Class Method

Dermal LD50

>2000 mg/kg (rats)

Method: OECD Test No. 402: Acute Dermal Toxicity

Inhalation LC50

No information available

Skin corrosion/irritation

Not irritating

Method: OECD Test No. 404: Acute Dermal Irritation/Corrosion

Serious eye damage/eye irritation

Causes serious eye irritation

Method: OECD Test No. 405: Acute Eye Irritation/Corrosion

Sensitization

Dermal sensitization: non-sensitizing

Method: OECD Test No. 429: Skin Sensitization: Local Lymph Node Assay

Germ cell mutagenicity

Not mutagenic

Method: OECD Test No. 471: Bacterial Reverse Mutation Test; OECD Test No. 473: In vitro Mammalian Chromosome Aberration Test; OECD Test No. 476: In vitro Mammalian Cell Gene Mutation Test

Carcinogenicity

No information available

Repeated dose toxicity

Oral (NOEL/28d) 200-1000 mg/kg/d (rat) - CAS# 4767-03-7 2,2-bis(hydroxymethyl)propionic acid

Reproductive toxicity

No evidence of an effect on the reproductive organs was seen in a 28-day study at dose levels of up to and including 1000 mg/kg bw/d

Specific target organ toxicity - Single exposure

Irritating to respiratory system

Specific target organ toxicity - Repeated exposure

No information available

Aspiration hazard

No information available

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Acute aquatic toxicity

FishLC50: > 1,000 mg/L, 96 hours (*Danio rerio*)

Method: OECD Test No. 203: Fish, Acute Toxicity Test

CrustaceaEC50: > 100 mg/L, 48 hours (*Daphnia magna*)

Method: Acute daphnia toxicity according to test method OECD 202.

Bacteria toxicity

EC50: > 1,000 mg/L, 30 minutes (bacteria)

Method: OECD Test No. 209: Activated Sludge, Respiration Inhibition Test (Carbon and Ammonium Oxidation)

Algae/aquatic plantsEC50: 750 mg/L, 72 hours (*Pseudokirchnerella subcapitata*)

Method: OECD Test No. 201: Freshwater Alga and Cyanobacteria, Growth Inhibition Test

12.2 Persistence and degradability

Persistence and degradability

Readily biodegradable

Biodegradation

28-day biodegradation = 90 - 100%.

Method: OECD Test No. 301A: Ready Biodegradability: DOC Die-Away Test (TG 301 A)

12.3 Bioaccumulative potential

Bioaccumulative potential

Due to the distribution coefficient n-octanol/water an accumulation in organisms is not expected.

BCF: 3.2 (calculated)

log Pow -1.1 (OECD 117)

12.4 Mobility in soil

Mobility

The substance is not expected to adsorb to a high degree to suspended solids and sediment based upon the log Pow.

12.5 Results of PBT and vPvB assessment

PBT and vPvB assessment

This substance is not considered to be persistent, bioaccumulating nor toxic (PBT)

This substance is not considered to be very persistent nor very bioaccumulating (vPvB)

12.6 Other adverse effects

Other information

No other ecological studies have been carried out on this product.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Disposal of wastes

Dispose of product in an approved chemical waste landfill or incinerate in accordance with applicable Federal, state and local regulations. Do not put solutions containing this product into sewer systems.

Contaminated packaging

Since empty containers retain product residue, follow label warnings even after container is emptied.

Waste codes / waste designations according to EWC / AVV

07.01.99; wastes not otherwise specified

14. TRANSPORT INFORMATION

US DOT Not regulated

14.1. UN number

14.2. UN proper shipping name

14.3. Transport hazard class(es)

14.4. Packing group

14.5. Environmental hazards

14.6. Special precautions for user

Land transport (ADR/RID) Not regulated

14.1. UN number

14.2. UN proper shipping name

14.3. Transport hazard class(es)

14.4. Packing group

14.5. Environmental hazards

14.6. Special precautions for user

Air transport (ICAO-TI / IATA-DGR) Not regulated

14.1. UN number

14.2. UN proper shipping name

14.3. Transport hazard class(es)

- 14.4. Packing group
- 14.5. Environmental hazards
- 14.6. Special precautions for user

Sea transport (IMDG) Not regulated

- 14.1. UN number
- 14.2. UN proper shipping name
- 14.3. Transport hazard class(es)
- 14.4. Packing group
- 14.5. Environmental hazards
- 14.6. Special precautions for user

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

Not applicable

15. REGULATORY INFORMATION

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

Ozone depletion potential (ODP)

Negative

National Regulations

Germany - Water Classification (VwVwS)

Water endangering class = 1 (self classification)

International Inventories

Australia (AICS)

All ingredients are on the inventory or exempt from listing

Canada (DSL)

All ingredients are on the inventory or exempt from listing

Canada (NDSL)

None of the ingredients are on the inventory.

China (IECSC)

All ingredients are on the inventory or exempt from listing

European Union (EINECS)

All ingredients are on the inventory or exempt from listing

European Union (ELINCS)

None of the ingredients are on the inventory.

Japan (ENCS)

All ingredients are on the inventory or exempt from listing

South Korea (KECL)

All ingredients are on the inventory or exempt from listing

Philippines (PICCS)

All ingredients are on the inventory or exempt from listing

United States (TSCA)

All ingredients are on the inventory or exempt from listing

Legend

AICS - Australian Inventory of Chemical Substances

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

IECSC - China Inventory of Existing Chemical Substances

EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances

ENCS - Japan Existing and New Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

15.2 Chemical Safety Report

A Chemical Safety Assessment has been carried out for this substance.

16. OTHER INFORMATION

Product code 3105A

Revision date 2019-Nov-14

Full text of H-Statements referred to under sections 2 and 3

H319 - Causes serious eye irritation

H335 - May cause respiratory irritation

Key or legend to abbreviations and acronyms used in the safety data sheet

NAV - Not available

This safety data sheet complies with the requirements of: Regulation (EC) No. 1907/2006.

Additional information

None

Disclaimer

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.