

SAFETY DATA SHEET

ANGUS CHEMICAL COMPANY

Product name : DMAMP™ ULTRA PC

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ANGUS CHEMICAL COMPANY encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

1. PRODUCT AND COMPANY IDENTIFICATION

Product name DMAMP™ ULTRA PC

Manufacturer or supplier's details

Company name of supplier ANGUS CHEMICAL COMPANY

Address 1500 E. LAKE COOK ROAD
Buffalo Grove IL 60089-6553

Customer Information +1-847-808-3711
Number

E-mail address NAR_CC@ANGUS.COM

Emergency telephone +1 800-424-9300
number

Recommended use of the chemical and restrictions on use

Recommended use Personal care applications.

2. HAZARDS IDENTIFICATION

GHS classification in accordance with 29 CFR 1910.1200

Flammable liquids : Category 4

Acute toxicity (Oral) : Category 4

Skin irritation : Category 2

Serious eye damage : Category 1

GHS label elements

Hazard pictograms



Signal word

: Danger

Hazard statements

: H227 Combustible liquid.
H302 Harmful if swallowed.
H315 Causes skin irritation.
H318 Causes serious eye damage.

Precautionary statements

: **Prevention:**

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P280 Wear protective gloves/ eye protection/ face protection.

Response:

P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Rinse mouth.
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor.
P332 + P313 If skin irritation occurs: Get medical advice/ attention.
P362 Take off contaminated clothing and wash before reuse.
P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.

Storage:

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

Disposal:

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

Other hazards

None known.

3. COMPOSITION/INFORMATION ON INGREDIENTS

This product is a mixture.

Components

Chemical name	CAS-No.	Concentration (% w/w)
2-(Dimethylamino)-2-methyl-1-propanol	7005-47-2	>= 78 - <= 82
Water	7732-18-5	>= 18 - <= 22
2-Methylamino-2-methyl-1-propanol	27646-80-6	< 0.5

4. FIRST AID MEASURES

If inhaled	Move person to fresh air; if effects occur, consult a physician.
In case of skin contact	Wash off with plenty of water.
If swallowed	Do not induce vomiting. Give one cup (8 ounces or 240 ml) of water or milk if available and transport to a medical facility. Do not give anything by mouth unless the person is fully conscious.
Most important symptoms and effects, both acute and delayed	Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), any additional important symptoms and effects are described in Section 11: Toxicology Information.
Protection of first-aiders	First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection). If potential for exposure exists refer to Section 8 for specific personal protective equipment.
Notes to physician	Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient. No specific antidote. Due to irritant properties, swallowing may result in burns/ulceration of mouth, stomach and lower gastrointestinal tract with subsequent stricture. Aspiration of vomitus may cause lung injury. Suggest endotracheal/esophageal control if lavage is done. Chemical eye burns may require extended irrigation. Obtain prompt consultation, preferably from an ophthalmologist.

5. FIREFIGHTING MEASURES

Suitable extinguishing media	Water fog or fine spray. Carbon dioxide fire extinguishers. Dry chemical fire extinguishers. Foam. Alcohol resistant foams (ATC type) are preferred. General purpose synthetic foams (including AFFF) or protein foams may function, but will be less effective.
Specific hazards during firefighting	None known.
Hazardous combustion products	During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to: Carbon dioxide. Carbon monoxide. Nitrogen oxides.

Further information	Keep people away. Isolate fire and deny unnecessary entry. Burning liquids may be moved by flushing with water to protect personnel and minimize property damage. Burning liquids may be extinguished by dilution with water.
Special protective equipment for firefighters	Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). Avoid contact with this material during fire fighting operations. If contact is likely, change to full chemical resistant fire fighting clothing with self-contained breathing apparatus. If this is not available, wear full chemical resistant clothing with self-contained breathing apparatus and fight fire from a remote location. For protective equipment in post-fire or non-fire clean-up situations, refer to the relevant sections.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	Keep personnel out of low areas. Keep upwind of spill. Ventilate area of leak or spill. No smoking in area. Only trained and properly protected personnel must be involved in clean-up operations. Evacuate area. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection. Refer to section 7, Handling, for additional precautionary measures.
Environmental precautions	Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.
Methods and materials for containment and cleaning up	Contain spilled material if possible. Collect in suitable and properly labeled containers. See Section 13, Disposal Considerations, for additional information.

7. HANDLING AND STORAGE

Advice on safe handling	Keep away from heat, sparks and flame. Do not swallow. Wash thoroughly after handling. Avoid breathing vapor or mist. Use with adequate ventilation. Keep container closed. Do not get in eyes. Avoid contact with skin and clothing. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION. Spills of these organic materials on hot fibrous insulations may lead to lowering of the autoignition temperatures possibly
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	resulting in spontaneous combustion. Containers, even those that have been emptied, can contain vapors. Do not cut, drill, grind, weld, or perform similar operations on or near empty containers.
Conditions for safe storage	Store in a cool, dry place. Store in original container. Do not store in: Zinc. Galvanized containers. Aluminum. Copper. Copper alloys.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Contains no substances with occupational exposure limit values.

Engineering measures

Local exhaust ventilation may be necessary for some operations.
Use local exhaust ventilation, or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, general ventilation should be sufficient for most operations.

Personal protective equipment

Respiratory protection

Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk assessment process.
In misty atmospheres, use an approved particulate respirator. The following should be effective types of air-purifying respirators:
Organic vapor cartridge with a particulate pre-filter, type AP2.

Hand protection

Use gloves chemically resistant to this material. Examples of preferred glove barrier materials include: Polyethylene. Chlorinated polyethylene. Ethyl vinyl alcohol laminate ("EVAL"). Examples of acceptable glove barrier materials include: Viton. Butyl rubber. Neoprene. Natural rubber ("latex"). Polyvinyl chloride ("PVC" or "vinyl"). Nitrile/butadiene rubber ("nitrile" or "NBR"). Avoid gloves made of: Polyvinyl alcohol ("PVA"). NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture

	protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.
Skin and body protection	Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, boots, apron, or full body suit will depend on the task.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Liquid.
Colour	White to brown
Odour	Ammoniacal
Odour Threshold	No test data available
pH	11.6 Method: Literature (0.1 M in water)
Melting point/range	-4 °F / -20 °C Method: Literature
Freezing point	-4 °F / -20 °C Method: Literature
Boiling point/boiling range	208 °F / 98 °C Method: Literature
Flash point	153 °F / 67 °C Method: Tag Closed Cup ASTM D56, closed cup
Evaporation rate	No test data available
Upper explosion limit / Upper flammability limit	No test data available
Lower explosion limit / Lower flammability limit	No test data available
Vapour pressure	721 Pa (77 °F / 25 °C) Method: EC Method A4 Anhydrous
Relative vapour density	4 Method: Literature
Relative density	>=0.95 (25 °C) Method: Literature
Water solubility	Method: Literature Miscible with water

Partition coefficient: n-octanol/water	log Pow: 0.09 (68 °F / 20 °C) Method: OECD Test Guideline 107 or Equivalent Bioconcentration potential is low (BCF < 100 or Log Pow < 3).
Auto-ignition temperature	604 °F / 318 °C Method: EC Method A15 Anhydrous
Decomposition temperature	No test data available
Viscosity Viscosity, kinematic	60 cS Method: Literature
Molecular weight	No test data available

NOTE: The physical data presented above are typical values and should not be construed as a specification.

10. STABILITY AND REACTIVITY

Reactivity	No dangerous reaction known under conditions of normal use.
Chemical stability	Stable under recommended storage conditions. See Storage, Section 7.
Conditions to avoid	Exposure to elevated temperatures can cause product to decompose.
Incompatible materials	Avoid contact with: Strong acids. Strong oxidizers. Avoid contact with metals such as: Zinc. Galvanized metals. Copper alloys. Nitrites. Aluminum. Copper. Avoid unintended contact with: Halogenated hydrocarbons.
Hazardous decomposition products	Decomposition products depend upon temperature, air supply and the presence of other materials.

11. TOXICOLOGICAL INFORMATION

Toxicological information on this product or its components appear in this section when such data is available.

Acute toxicity

Product:

Acute oral toxicity : Remarks: Low toxicity if swallowed.
Swallowing may result in irritation or burns of the mouth,

throat, and gastrointestinal tract.

LD50 (Rat, male): 1,768 mg/kg

LD50 (Rat, female): 1,656 mg/kg

Acute inhalation toxicity : Remarks: At room temperature, exposure to vapor is minimal due to low volatility.
Mist may cause irritation of upper respiratory tract (nose and throat).

LC50 (Rat): > 2.6 mg/l

Exposure time: 1 h

Test atmosphere: vapour

Symptoms: No deaths occurred at this concentration.

Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity : Remarks: Prolonged skin contact is unlikely to result in absorption of harmful amounts.

LD50 (Rabbit): > 2,000 mg/kg

Symptoms: No deaths occurred at this concentration.

Assessment: The substance or mixture has no acute dermal toxicity

Skin corrosion/irritation

Product:

Result : Skin irritation

Remarks : Brief contact may cause severe skin irritation with pain and local redness.

Remarks : Not classified as corrosive to the skin according to DOT guidelines.

Serious eye damage/eye irritation

Product:

Remarks : May cause severe irritation with corneal injury which may result in permanent impairment of vision, even blindness.
Chemical burns may occur.

Respiratory or skin sensitisation

Product:

Remarks : For skin sensitization:
Did not cause allergic skin reactions when tested in guinea pigs.

Remarks : For respiratory sensitization:
No relevant data found.

Carcinogenicity**Product:**

No relevant data found.

Teratogenicity**Product**

In a screening study in rats, 2-amino-2-methyl-1-propanol hydrochloride salt was toxic to the fetus when administered at high oral doses. However, this material did not cause birth defects or any other effects on the fetus when high doses were administered dermally, the most likely route of exposure, in a definitive rat developmental toxicity study.

Mutagenicity**Product**

In vitro genetic toxicity studies were negative.

Reproductive toxicity**Product:**

No relevant data found.

STOT - single exposure**Product:**

Assessment : Evaluation of available data suggests that this material is not an STOT-SE toxicant.

Repeated dose toxicity**Product:**

Remarks : For the minor component(s):
In animals, effects have been reported on the following organs:
Liver.

Aspiration toxicity**Product:**

Based on physical properties, not likely to be an aspiration hazard.

12. ECOLOGICAL INFORMATION

Ecotoxicity**Product:**

Toxicity to fish

Remarks: Material is practically non-toxic to aquatic

organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).

LC50 (Leuciscus idus (Golden orfe)): 230 mg/l

Exposure time: 96.0 h

Test Type: static test

Toxicity to daphnia and other aquatic invertebrates

EC50 (water flea Daphnia magna): 170.00 mg/l

Exposure time: 48.0 h

Test Type: static test

Toxicity to algae

ErC50 (Pseudokirchneriella subcapitata (green algae)): 390 mg/l

Exposure time: 72 h

Toxicity to bacteria

EC50 (Bacteria): 440 mg/l

Exposure time: 16 h

Persistence and degradability

Product:

Biodegradability

Remarks: Substance exhibits potential to biodegrade in the environment, but has not passed OECD/EEC tests for ready biodegradability.

Biodegradation: 8 %

Exposure time: 28 d

Method: OECD Test Guideline 301D or Equivalent

Remarks: 10-day Window: Fail

ThOD

2.870 mg/mg

Photodegradation

Test Type: Half-life (indirect photolysis)

Sensitiser: OH radicals

Rate constant: 7.3E-11 cm³/s

Rate constant: Degradation half life: 0.15 d

Method: Estimated.

Bioaccumulative potential

Partition coefficient: n-octanol/water

log Pow: 0.09 (20 °C)

Method: OECD Test Guideline 107 or Equivalent

Remarks: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

Components:

2-(dimethylamino)-2-methylpropan-1-ol:

Partition coefficient: n-octanol/water

log Pow: 0.09

Method: OECD Test Guideline 107 or Equivalent

Remarks: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

2-Methylamino-2-methyl-1-propanol:

Partition coefficient: n-octanol/water

Remarks: No relevant data found.

Mobility in soil**Product:**Distribution among
environmental compartments

Koc: 219

Method: OECD 121: HPLC Method

Remarks: Potential for mobility in soil is very high (Koc
between 0 and 50).**Other adverse effects****Product:**Results of PBT and vPvB
assessmentThis substance is not considered to be persistent,
bioaccumulating and toxic (PBT). This substance is not
considered to be very persistent and very bioaccumulating
(vPvB).

Ozone-Depletion Potential

Remarks: No data available

13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues

DO NOT DUMP INTO ANY SEWERS, ON THE GROUND,
OR INTO ANY BODY OF WATER.All disposal practices must be in compliance with all Federal,
State/Provincial and local laws and regulations.

Regulations may vary in different locations.

Waste characterizations and compliance with applicable laws
are the responsibility solely of the waste generator.THE INFORMATION PRESENTED HERE PERTAINS ONLY
TO THE PRODUCT AS SHIPPED IN ITS INTENDED
CONDITION AS DESCRIBED IN MSDS SECTION:

Composition Information.

FOR UNUSED & UNCONTAMINATED PRODUCT, the
preferred options include sending to a licensed, permitted:
Incinerator or other thermal destruction device.

Landfill.

ANGUS HAS NO CONTROL OVER THE MANAGEMENT
PRACTICES OR MANUFACTURING PROCESSES OF
PARTIES HANDLING OR USING THIS MATERIAL.

14. TRANSPORT INFORMATION

International Regulations**IATA-DGR**

Not regulated as a dangerous good

IMDG-Code

Not regulated as a dangerous good

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

Not applicable for product as supplied.

National Regulations**49 CFR (DOT) -BULK**

UN/ID/NA number	NA 1993
Proper shipping name	(2-(Dimethylamino)-2-methyl-1-propanol)
Class	CBL
Packing group	III
ERG Code	128
Marine pollutant	no

49 CFR (DOT) – NON BULK

Not regulated as a dangerous good

Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

15. REGULATORY INFORMATION

OSHA Hazards

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

EPCRA - Emergency Planning and Community Right-to-Know Act**CERCLA Reportable Quantity**

This material does not contain any components with a CERCLA RQ.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

Components	CAS-No.	Component TPQ (lbs)
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SARA 311/312 Hazards	:	Fire Hazard Acute Health Hazard Chronic Health Hazard
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SARA 313	:	This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.
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This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCM I Intermediate or Final VOC's (40 CFR 60.489).

US State Regulations**Massachusetts Right To Know**

No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right To Know

2-(dimethylamino)-2-methylpropan-1-ol 7005-47-2

Maine Chemicals of High Concern

This product does not contain any chemicals that are listed as Maine Chemicals of High Concern.

New Jersey Right To Know

2-(dimethylamino)-2-methylpropan-1-ol 7005-47-2

California Prop. 65

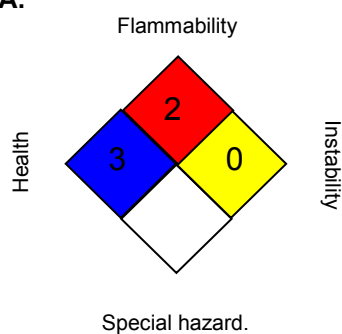
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

The components of this product are reported in the following inventories:

United States TSCA : All Components OK
Inventory

Remarks:

2-Methylamino-2-methyl-1-propanol is considered an impurity in this product and is therefore not required to be specifically listed on certain chemical control inventories such as TSCA.

16. OTHER INFORMATION**Further information****NFPA:****HMIS III:**

HEALTH	3
FLAMMABILITY	2
PHYSICAL HAZARD	0

0 = not significant, 1 =Slight,
2 = Moderate, 3 = High
4 = Extreme, * = Chronic

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Identification Number: 000040004485

US / EN

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.

Full text of other abbreviations

AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative