N,N-Dimethylacetamide (DMAC), GC Headspace, Veritas Ultimate

GFS CHEMICALS INC

Chemwatch Hazard Alert Code: **4**

Version No: **2.2**
Safety Data Sheet according to OSHA HazCom Standard (2024) requirements

Initial Date: **28/07/2025**
Revision Date: **14/08/2025**
Print Date: **07/10/2025**
L.GHS.USA.EN

SECTION 1 Identification

Product Identifier

Product name	N,N-Dimethylacetamide (DMAC), GC Headspace, Veritas Ultimate
Chemical Name	Not Available
Synonyms	Not Available
Chemical formula	(CH3)2NCOCH3
Other means of identification	Not Available
CAS number	127-19-5

Recommended use of the chemical and restrictions on use

Relevant identified uses	Laboratory and manufacturing use only.

Name, address, and telephone number of the chemical manufacturer, importer, or other responsible party

Registered company name	**GFS CHEMICALS INC**
Address	155 Hidden Ravines Dr., Powell OH 43065 Columbus OH United States
Telephone	+1 740-881-5501
Fax	Not Available
Website	www.gfschemicals.com
Email	service@gfschemicals.com

Emergency phone number

Association / Organisation	**Chemtrec**
Emergency telephone number(s)	(800)262-8200
Other emergency telephone number(s)	Not Available

SECTION 2 Hazard(s) identification

Classification of the substance or mixture

NFPA 704 diamond

Note: The hazard category numbers found in GHS classification in section 2 of this SDSs are NOT to be used to fill in the NFPA 704 diamond. Blue = Health Red = Fire Yellow = Reactivity White = Special (Oxidizer or water reactive substances)

Classification	Flammable Liquids Category 4, Acute Toxicity (Dermal) Category 4, Serious Eye Damage/Eye Irritation Category 2B, Acute Toxicity (Inhalation) Category 4, Reproductive Toxicity Category 1B, Specific Target Organ Toxicity - Repeated Exposure Category 2

Label elements

Hazard pictogram(s)	
Signal word	**Danger**

Hazard statement(s)

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H227	Combustible liquid.
H312	Harmful in contact with skin.
H320	Causes eye irritation.
H332	Harmful if inhaled.
H360	May damage fertility or the unborn child.
H373	May cause damage to organs through prolonged or repeated exposure.

Hazard(s) not otherwise classified

Not Applicable

Precautionary statement(s) Prevention

P201	Obtain special instructions before use.
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P260	Do not breathe mist/vapours/spray.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves and protective clothing.
P261	Avoid breathing mist/vapours/spray.
P202	Do not handle until all safety precautions have been read and understood.
P264	Wash all exposed external body areas thoroughly after handling.

Precautionary statement(s) Response

P308+P313	IF exposed or concerned: Get medical advice/ attention.
P370+P378	In case of fire: Use alcohol resistant foam or normal protein foam to extinguish.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P312	Call a POISON CENTER/doctor/physician/first aider/if you feel unwell.
P314	Get medical advice/attention if you feel unwell.
P337+P313	If eye irritation persists: Get medical advice/attention.
P302+P352	IF ON SKIN: Wash with plenty of water.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P362+P364	Take off contaminated clothing and wash it before reuse.

Precautionary statement(s) Storage

P403+P235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.

Precautionary statement(s) Disposal

P501	Dispose of contents/container to authorised hazardous or special waste collection point in accordance with any local regulation.

No further product hazard information.

SECTION 3 Composition / information on ingredients

Substances

CAS No	%[weight]	Name
127-19-5	>99	N,N-dimethylacetamide

Mixtures

See section above for composition of Substances

SECTION 4 First-aid measures

Description of first aid measures

Eye Contact	If this product comes in contact with the eyes: ▸ Immediately hold eyelids apart and flush the eye continuously with running water. ▸ Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids. ▸ Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes. ▸ Transport to hospital or doctor without delay. ▸ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.
Skin Contact	If skin or hair contact occurs: ▸ Quickly but gently, wipe material off skin with a dry, clean cloth. ▸ Immediately remove all contaminated clothing, including footwear. ▸ Wash skin and hair with running water. Continue flushing with water until advised to stop by the Poisons Information Centre. ▸ Transport to hospital, or doctor.
Inhalation	▸ If fumes or combustion products are inhaled remove from contaminated area. ▸ Lay patient down. Keep warm and rested. ▸ Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures. ▸ Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary. ▸ Transport to hospital, or doctor, without delay.
Ingestion	▸ Immediately give a glass of water.

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	▸ First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor. ▸ If spontaneous vomiting appears imminent or occurs, hold patient's head down, lower than their hips to help avoid possible aspiration of vomitus.

Most important symptoms and effects, both acute and delayed

See Section 11

Indication of any immediate medical attention and special treatment needed

Treat symptomatically.
As in all cases of suspected poisoning, follow the ABCDEs of emergency medicine (airway, breathing, circulation, disability, exposure), then the ABCDEs of toxicology (antidotes, basics, change absorption, change distribution, change elimination).
For poisons (where specific treatment regime is absent):

BASIC TREATMENT

- Establish a patent airway with suction where necessary.
- Watch for signs of respiratory insufficiency and assist ventilation as necessary.
- Administer oxygen by non-rebreather mask at 10 to 15 L/min.
- Monitor and treat, where necessary, for pulmonary oedema.
- Monitor and treat, where necessary, for shock.
- Anticipate seizures.
- **DO NOT** use emetics. Where ingestion is suspected rinse mouth and give up to 200 ml water (5 ml/kg recommended) for dilution where patient is able to swallow, has a strong gag reflex and does not drool.

ADVANCED TREATMENT

- Consider orotracheal or nasotracheal intubation for airway control in unconscious patient or where respiratory arrest has occurred.
- Positive-pressure ventilation using a bag-valve mask might be of use.
- Monitor and treat, where necessary, for arrhythmias.
- Start an IV D5W TKO. If signs of hypovolaemia are present use lactated Ringers solution. Fluid overload might create complications.
- Drug therapy should be considered for pulmonary oedema.
- Hypotension with signs of hypovolaemia requires the cautious administration of fluids. Fluid overload might create complications.
- Treat seizures with diazepam.
- Proparacaine hydrochloride should be used to assist eye irrigation.

BRONSTEIN, A.C. and CURRANCE, P.L.
EMERGENCY CARE FOR HAZARDOUS MATERIALS EXPOSURE: 2nd Ed. 1994

SECTION 5 Fire-fighting measures

Extinguishing media

- Alcohol stable foam.
- Water spray or fog.
- Foam.
- Dry chemical powder.
- BCF (where regulations permit).
- Carbon dioxide.

Special hazards arising from the substrate or mixture

Fire Incompatibility	▸ Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result

Special protective equipment and precautions for fire-fighters

Fire Fighting	▸ Alert Fire Brigade and tell them location and nature of hazard. ▸ Wear full body protective clothing with breathing apparatus. ▸ Prevent, by any means available, spillage from entering drains or water course. ▸ Use water delivered as a fine spray to control fire and cool adjacent area. ▸ Avoid spraying water onto liquid pools. ▸ **DO NOT** approach containers suspected to be hot. ▸ Cool fire exposed containers with water spray from a protected location. ▸ If safe to do so, remove containers from path of fire.
Fire/Explosion Hazard	▸ Combustible. ▸ Slight fire hazard when exposed to heat or flame. ▸ Heating may cause expansion or decomposition leading to violent rupture of containers. ▸ On combustion, may emit toxic fumes of carbon monoxide (CO). ▸ May emit acrid smoke. ▸ Mists containing combustible materials may be explosive. Combustion products include: , carbon dioxide (CO_2) , nitrogen oxides (NOx) , other pyrolysis products typical of burning organic material. May emit poisonous fumes. May emit corrosive fumes.

SECTION 6 Accidental release measures

Personal precautions, protective equipment and emergency procedures

See section 8

Environmental precautions

See section 12

Methods and material for containment and cleaning up

Minor Spills	▸ Remove all ignition sources.

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	▸ Clean up all spills immediately. ▸ Avoid breathing vapours and contact with skin and eyes. ▸ Control personal contact with the substance, by using protective equipment. ▸ Contain and absorb spill with sand, earth, inert material or vermiculite. ▸ Wipe up. ▸ Place in a suitable, labelled container for waste disposal.
Major Spills	▸ Clear area of personnel and move upwind. ▸ Alert Fire Brigade and tell them location and nature of hazard. ▸ Wear full body protective clothing with breathing apparatus. ▸ Prevent, by all means available, spillage from entering drains or water courses. ▸ Consider evacuation (or protect in place). ▸ No smoking, naked lights or ignition sources. ▸ Increase ventilation. ▸ Stop leak if safe to do so. ▸ Water spray or fog may be used to disperse / absorb vapour. ▸ Contain or absorb spill with sand, earth or vermiculite. ▸ Collect recoverable product into labelled containers for recycling. ▸ Collect solid residues and seal in labelled drums for disposal. ▸ Wash area and prevent runoff into drains. ▸ After clean up operations, decontaminate and launder all protective clothing and equipment before storing and re-using. ▸ If contamination of drains or waterways occurs, advise emergency services.

Personal Protective Equipment advice is contained in Section 8 of the SDS.

SECTION 7 Handling and storage

Precautions for safe handling

Safe handling	▸ Avoid all personal contact, including inhalation. ▸ Wear protective clothing when risk of exposure occurs. ▸ Use in a well-ventilated area. ▸ Prevent concentration in hollows and sumps. ▸ **DO NOT** enter confined spaces until atmosphere has been checked. ▸ Avoid smoking, naked lights or ignition sources. ▸ Avoid contact with incompatible materials. ▸ When handling, **DO NOT** eat, drink or smoke. ▸ Keep containers securely sealed when not in use. ▸ Avoid physical damage to containers. ▸ Always wash hands with soap and water after handling. ▸ Work clothes should be laundered separately. ▸ Use good occupational work practice. ▸ Observe manufacturer's storage and handling recommendations contained within this SDS. ▸ Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions.
Other information	▸ Store in original containers. ▸ Keep containers securely sealed. ▸ No smoking, naked lights or ignition sources. ▸ Store in a cool, dry, well-ventilated area. ▸ Store away from incompatible materials and foodstuff containers. ▸ Protect containers against physical damage and check regularly for leaks. ▸ Observe manufacturer's storage and handling recommendations contained within this SDS.

Conditions for safe storage, including any incompatibilities

Suitable container	▸ Metal can or drum ▸ Packaging as recommended by manufacturer. ▸ Check all containers are clearly labelled and free from leaks.
Storage incompatibility	▸ Many aprotic (non-hydroxylic) solvents are not inert towards other reagents and care must be taken when using untried combinations of solvents an reagents for the first time. ▸ Some aprotic solvents have a dramatic effect on reaction rates N,N-dimethylacetamide (DMAc): ▸ reacts violently with strong oxidisers and halogenated compounds (eg. CCl4, benzene hexachloride), particularly in the presence of iron. ▸ is incompatible with mineral acids, strong acids, ammonia, isocyanates, phenols, cresols ▸ is corrosive when dissolved in water ▸ attacks plastics, rubber and coatings ▸ Avoid reaction with oxidising agents

SECTION 8 Exposure controls / personal protection

Control parameters

Occupational Exposure Limits (OEL)

INGREDIENT DATA

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
US OSHA Permissible Exposure Limits (PELs) Table Z-1	N,N-dimethylacetamide	Dimethyl acetamide	10 ppm / 35 mg/m3	Not Available	Not Available	Skin designation
US NIOSH Recommended Exposure Limits (RELs)	N,N-dimethylacetamide	Dimethyl acetamide	10 ppm / 35 mg/m3	Not Available	Not Available	[skin]

Emergency Limits

Ingredient	TEEL-1	TEEL-2	TEEL-3
N,N-dimethylacetamide	30 ppm	67 ppm	400 ppm

Ingredient	Original IDLH	Revised IDLH
N,N-dimethylacetamide	300 ppm	Not Available

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MATERIAL DATA

Exposed individuals are **NOT** reasonably expected to be warned, by smell, that the Exposure Standard is being exceeded.

Odour Safety Factor (OSF) is determined to fall into either Class C, D or E.

The Odour Safety Factor (OSF) is defined as:

OSF= Exposure Standard (TWA) ppm/ Odour Threshold Value (OTV) ppm

Classification into classes follows:

Class	OSF	Description
A	550	Over 90% of exposed individuals are aware by smell that the Exposure Standard (TLV-TWA for example) is being reached, even when distracted by working activities
B	26-550	As "A" for 50-90% of persons being distracted
C	1-26	As "A" for less than 50% of persons being distracted
D	0.18-1	10-50% of persons aware of being tested perceive by smell that the Exposure Standard is being reached
E	<0.18	As "D" for less than 10% of persons aware of being tested

For N,N-dimethylacetamide (DMAC)
N,N-dimethylacetamide (DMAC) Recognition Threshold: 100% Test Panel = 46.8 ppm, 50% Test Panel = 21.4 ppm.
NOTE: Detector tubes for dimethylacetamide, measuring in excess of 10 ppm, are commercially available.
Odour Safety Factor(OSF)
OSF=0.21 ("N,N-DIMETHYL ACETAMIDE")
On the basis of animal studies, coupled with industrial experience the recommended TLV is thought to reduce the potential for injury to the liver and foetus, provided skin contact is prevented. The dermal factor is considered in practice to be so significant that no air concentration, no matter how low, will provide protection if skin contact with the liquid is permitted.
One study establishing a LOAEL of 40 ppm (145 mg/m3) for slight irritation of the respiratory tract of rats and dogs, was considered to be the best available basis for proposing occupational exposure limits. An uncertainty factor of 5 was considered appropriate because of the absence of a NOAEL. Taking into account the preferred value approach, and the minimal nature of the effects, the recommended eight-hour SCOEL TWA is 10 ppm (36 mg/m3). A STEL (15 minutes) of 20 ppm (72 mg/m3) was proposed to limit peaks in exposure which could result in irritation. A 'skin notation was recommended as dermal absorption contributes substantially to the total body burden. At the levels recommended, no measurement difficulties are foreseen.
(Scientific Committee on Occupational Exposure Limits (SCOEL)

Exposure controls

Appropriate engineering controls	Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection. The basic types of engineering controls are: Process controls which involve changing the way a job activity or process is done to reduce the risk. Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment. Ventilation can remove or dilute an air contaminant if designed properly. The design of a ventilation system must match the particular process and chemical or contaminant in use. Employers may need to use multiple types of controls to prevent employee overexposure. ▸ Employees exposed to confirmed human carcinogens should be authorized to do so by the employer, and work in a regulated area. ▸ Work should be undertaken in an isolated system such as a "glove-box" . Employees should wash their hands and arms upon completion of the assigned task and before engaging in other activities not associated with the isolated system. ▸ Within regulated areas, the carcinogen should be stored in sealed containers, or enclosed in a closed system, including piping systems, with any sample ports or openings closed while the carcinogens are contained within. ▸ Open-vessel systems are prohibited. ▸ Each operation should be provided with continuous local exhaust ventilation so that air movement is always from ordinary work areas to the operation. ▸ Exhaust air should not be discharged to regulated areas, non-regulated areas or the external environment unless decontaminated. Clean make-up air should be introduced in sufficient volume to maintain correct operation of the local exhaust system. ▸ For maintenance and decontamination activities, authorized employees entering the area should be provided with and required to wear clean, impervious garments, including gloves, boots and continuous-air supplied hood. Prior to removing protective garments the employee should undergo decontamination and be required to shower upon removal of the garments and hood. ▸ Except for outdoor systems, regulated areas should be maintained under negative pressure (with respect to non-regulated areas). ▸ Local exhaust ventilation requires make-up air be supplied in equal volumes to replaced air. ▸ Laboratory hoods must be designed and maintained so as to draw air inward at an average linear face velocity of 0.76 m/sec with a minimum of 0.64 m/sec. Design and construction of the fume hood requires that insertion of any portion of the employees body, other than hands and arms, be disallowed.
Individual protection measures, such as personal protective equipment	
Eye and face protection	▸ Safety glasses with side shields. ▸ Chemical goggles. [AS/NZS 1337.1, EN166 or national equivalent] ▸ Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59].
Skin protection	See Hand protection below
Hands/feet protection	▸ Wear chemical protective gloves, e.g. PVC. ▸ Wear safety footwear or safety gumboots, e.g. Rubber The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application. The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and has to be observed when making a final choice. Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended. Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include: · frequency and duration of contact, · chemical resistance of glove material,

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	· glove thickness and · dexterity Select gloves tested to a relevant standard (e.g. Europe EN 374, US F739, AS/NZS 2161.1 or national equivalent). · When prolonged or frequently repeated contact may occur, a glove with a protection class of 5 or higher (breakthrough time greater than 240 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended. · When only brief contact is expected, a glove with a protection class of 3 or higher (breakthrough time greater than 60 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended. · Some glove polymer types are less affected by movement and this should be taken into account when considering gloves for long-term use. · Contaminated gloves should be replaced. As defined in ASTM F-739-96 in any application, gloves are rated as: · Excellent when breakthrough time > 480 min · Good when breakthrough time > 20 min · Fair when breakthrough time < 20 min · Poor when glove material degrades For general applications, gloves with a thickness typically greater than 0.35 mm, are recommended. It should be emphasised that glove thickness is not necessarily a good predictor of glove resistance to a specific chemical, as the permeation efficiency of the glove will be dependent on the exact composition of the glove material. Therefore, glove selection should also be based on consideration of the task requirements and knowledge of breakthrough times. Glove thickness may also vary depending on the glove manufacturer, the glove type and the glove model. Therefore, the manufacturers technical data should always be taken into account to ensure selection of the most appropriate glove for the task. Note: Depending on the activity being conducted, gloves of varying thickness may be required for specific tasks. For example: · Thinner gloves (down to 0.1 mm or less) may be required where a high degree of manual dexterity is needed. However, these gloves are only likely to give short duration protection and would normally be just for single use applications, then disposed of. · Thicker gloves (up to 3 mm or more) may be required where there is a mechanical (as well as a chemical) risk i.e. where there is abrasion or puncture potential Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended. ▸ Aprotic solvents may greatly promote the toxic properties of solutes because of their unique ability to penetrate synthetic rubber protective gloves and the skin (butyl rubber gloves are reported to be more satisfactory than others
Body protection	See Other protection below
Other protection	▸ Employees working with confirmed human carcinogens should be provided with, and be required to wear, clean, full body protective clothing (smocks, coveralls, or long-sleeved shirt and pants), shoe covers and gloves prior to entering the regulated area. [AS/NZS ISO 6529:2006 or national equivalent] ▸ Employees engaged in handling operations involving carcinogens should be provided with, and required to wear and use half-face filter-type respirators with filters for dusts, mists and fumes, or air purifying canisters or cartridges. A respirator affording higher levels of protection may be substituted. [AS/NZS 1715 or national equivalent] ▸ Emergency deluge showers and eyewash fountains, supplied with potable water, should be located near, within sight of, and on the same level with locations where direct exposure is likely. ▸ Prior to each exit from an area containing confirmed human carcinogens, employees should be required to remove and leave protective clothing and equipment at the point of exit and at the last exit of the day, to place used clothing and equipment in impervious containers at the point of exit for purposes of decontamination or disposal. The contents of such impervious containers must be identified with suitable labels. For maintenance and decontamination activities, authorized employees entering the area should be provided with and required to wear clean, impervious garments, including gloves, boots and continuous-air supplied hood. ▸ Prior to removing protective garments the employee should undergo decontamination and be required to shower upon removal of the garments and hood. ▸ Overalls. ▸ P.V.C apron. ▸ Barrier cream. ▸ Skin cleansing cream. ▸ Eye wash unit.

Recommended material(s)

GLOVE SELECTION INDEX

Glove selection is based on a modified presentation of the:
"Forsberg Clothing Performance Index".
The effect(s) of the following substance(s) are taken into account in the ***computer-generated*** selection:
N,N-Dimethylacetamide (DMAC), GC Headspace, Veritas Ultimate

Material	CPI
BUTYL	A
SARANEX-23	B
NATURAL RUBBER	C
NATURAL+NEOPRENE	C
PVA	C

* CPI - Chemwatch Performance Index
A: Best Selection
B: Satisfactory; may degrade after 4 hours continuous immersion
C: Poor to Dangerous Choice for other than short term immersion
NOTE: As a series of factors will influence the actual performance of the glove, a final selection must be based on detailed observation. -
* Where the glove is to be used on a short term, casual or infrequent basis, factors such as "feel" or convenience (e.g. disposability), may dictate a choice of gloves which might otherwise be unsuitable following long-term or frequent use. A qualified practitioner should be consulted.

Ansell Glove Selection

Glove *— In order of recommendation*
AlphaTec 02-100
AlphaTec® 38-612
AlphaTec® 53-001
AlphaTec® 58-005
AlphaTec® Solvex® 37-175

Respiratory protection

Type A Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)

Where the concentration of gas/particulates in the breathing zone, approaches or exceeds the "Exposure Standard" (or ES), respiratory protection is required. Degree of protection varies with both face-piece and Class of filter; the nature of protection varies with Type of filter.

Required Minimum Protection Factor	Half-Face Respirator	Full-Face Respirator	Powered Air Respirator
up to 10 x ES	A-AUS	-	A-PAPR-AUS / Class 1
up to 50 x ES	-	A-AUS / Class 1	-
up to 100 x ES	-	A-2	A-PAPR-2 ^

^ - Full-face
A(All classes) = Organic vapours, B AUS or B1 = Acid gasses, B2 = Acid gas or hydrogen cyanide(HCN), B3 = Acid gas or hydrogen cyanide(HCN), E = Sulfur dioxide(SO2), G = Agricultural chemicals, K = Ammonia(NH3), Hg = Mercury, NO = Oxides of nitrogen, MB = Methyl bromide, AX = Low boiling point organic compounds(below 65 degC)

- Cartridge respirators should never be used for emergency ingress or in areas of unknown vapour concentrations or oxygen content.
- The wearer must be warned to leave the contaminated area immediately on detecting any odours through the respirator. The odour may indicate that the mask is not functioning properly, that the vapour concentration is too high, or that the mask is not properly fitted. Because of these limitations, only restricted use of cartridge respirators is considered appropriate.
- Cartridge performance is affected by humidity. Cartridges should be changed after 2 hr of continuous use unless it is determined that the humidity is less than 75%, in which case, cartridges can be used for 4 hr. Used cartridges should be discarded daily, regardless of the length of time used

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BioClean™ Emerald BENS
BioClean™ Extra BLAS
BioClean™ Fusion (Sterile) S-BFAP
BioClean™ N-Plus BNPS
BioClean™ Ultimate BUPS

The suggested gloves for use should be confirmed with the glove supplier.

SECTION 9 Physical and chemical properties

Information on basic physical and chemical properties

Appearance	Colourless

Physical state	Liquid	**Relative density (Water = 1)**	Not Available
Odour	Not Available	**Partition coefficient n-octanol / water**	Not Available
Odour threshold	Not Available	**Auto-ignition temperature (°C)**	335
pH (as supplied)	Not Available	**Decomposition temperature (°C)**	>350
Melting point / freezing point (°C)	-20	**Viscosity (cSt)**	1.02
Initial boiling point and boiling range (°C)	165	**Molecular weight (g/mol)**	87.12
Flash point (°C)	63	**Taste**	Not Available
Evaporation rate	Not Available	**Explosive properties**	Not Available
Flammability	Combustible.	**Oxidising properties**	Not Available
Upper Explosive Limit (%)	Not Available	**Surface Tension (dyn/cm or mN/m)**	Not Available
Lower Explosive Limit (%)	Not Available	**Volatile Component (%vol)**	Not Available
Vapour pressure (kPa)	0.20	**Gas group**	Not Available
Solubility in water	Miscible	**pH as a solution (1%)**	Not Available
Vapour density (Air = 1)	3.01	**VOC g/L**	Not Available
Heat of Combustion (kJ/g)	Not Available	**Ignition Distance (cm)**	Not Available
Flame Height (cm)	Not Available	**Flame Duration (s)**	Not Available
Enclosed Space Ignition Time Equivalent (s/m3)	Not Available	**Enclosed Space Ignition Deflagration Density (g/m3)**	Not Available
Nanoform Solubility	Not Available	**Nanoform Particle Characteristics**	Not Available
Particle Size	Not Available		

SECTION 10 Stability and reactivity

Reactivity	See section 7
Chemical stability	▸ Unstable in the presence of incompatible materials. ▸ Product is considered stable. ▸ Hazardous polymerisation will not occur.
Possibility of hazardous reactions	See section 7
Conditions to avoid	See section 7
Incompatible materials	See section 7
Hazardous decomposition products	See section 5

SECTION 11 Toxicological information

Information on toxicological effects

a) Acute Toxicity	There is sufficient evidence to classify this material as acutely toxic.
b) Skin Irritation/Corrosion	Based on available data, the classification criteria are not met.
c) Serious Eye Damage/Irritation	There is sufficient evidence to classify this material as eye damaging or irritating
d) Respiratory or Skin sensitisation	Based on available data, the classification criteria are not met.
e) Mutagenicity	Based on available data, the classification criteria are not met.
f) Carcinogenicity	Based on available data, the classification criteria are not met.
g) Reproductivity	There is sufficient evidence to classify this material as toxic to reproductivity
h) STOT - Single Exposure	Based on available data, the classification criteria are not met.
i) STOT - Repeated Exposure	There is sufficient evidence to classify this material as toxic to specific organs through repeated exposure
j) Aspiration Hazard	Based on available data, the classification criteria are not met.

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Inhaled	Inhalation of vapours or aerosols (mists, fumes), generated by the material during the course of normal handling, may produce toxic effects. The material is not thought to produce respiratory irritation (as classified by EC Directives using animal models). Nevertheless inhalation of vapours, fumes or aerosols, especially for prolonged periods, may produce respiratory discomfort and occasionally, distress. Inhalation of vapours may cause drowsiness and dizziness. This may be accompanied by narcosis, reduced alertness, loss of reflexes, lack of coordination and vertigo. Inhalation of N,N-dimethylacetamide (DMAc) may cause headache, nausea, vomiting, intolerance to alcohol, abdominal spasm and diarrhoea. Large doses can result in depression, lethargy, disorientation, and visual and auditory hallucinations. DMAc concentrations between 0 ppm and 2 ppm, with occasional excursions between 11 ppm and 34 ppm, in a polymer manufacturing operation caused dizziness, lethargy and weakness; similar findings were reported in metal finishing works.
Ingestion	The material is not thought to produce adverse health effects following ingestion (as classified by EC Directives using animal models). Nevertheless, adverse systemic effects have been produced following exposure of animals by at least one other route and good hygiene practice requires that exposure be kept to a minimum. Swallowing of the liquid may cause aspiration of vomit into the lungs with the risk of haemorrhaging, pulmonary oedema, progressing to chemical pneumonitis; serious consequences may result. Signs and symptoms of chemical (aspiration) pneumonitis may include coughing, gasping, choking, burning of the mouth, difficult breathing, and bluish coloured skin (cyanosis). When N,N-dimethylacetamide (DMAc) given to humans in daily doses (400 mg/kg for 3 days - route(?)), depression, lethargy, confusion and disorientation ensued. In some patients there were visual and auditory hallucinations, perceptual distortions, delusions, emotional detachment and effective blunting, all reminiscent of the reactions induced by mescaline and by lysergic acid derivatives Considered an unlikely route of entry in commercial/industrial environments. The liquid may produce gastrointestinal discomfort and may be harmful if swallowed. Ingestion may result in nausea, pain and vomiting. Vomit entering the lungs by aspiration may cause potentially lethal chemical pneumonitis Accidental ingestion of the material may be damaging to the health of the individual.
Skin Contact	Skin contact with the material may produce toxic effects; systemic effects may result following absorption. The material is not thought to be a skin irritant (i.e. is unlikely to produce irritant dermatitis as described in EC Directives using animal models). Temporary discomfort, however, may result from prolonged dermal exposures. Good hygiene practice requires that exposure be kept to a minimum and that suitable gloves be used in an occupational setting. Open cuts, abraded or irritated skin should not be exposed to this material Entry into the blood-stream through, for example, cuts, abrasions, puncture wounds or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.
Eye	Evidence exists, or practical experience predicts, that the material may cause eye irritation in a substantial number of individuals. Repeated or prolonged eye contact may cause inflammation (similar to windburn) characterised by a temporary redness of the conjunctiva (conjunctivitis); temporary impairment of vision and/or other transient eye damage/ulceration may occur.
Chronic	On the basis, primarily, of animal experiments, the material may be regarded as carcinogenic to humans. There is sufficient evidence to provide a strong presumption that human exposure to the material may result in cancer on the basis of: - appropriate long-term animal studies - other relevant information Toxic: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed. Serious damage (clear functional disturbance or morphological change which may have toxicological significance) is likely to be caused by repeated or prolonged exposure. As a rule the material produces, or contains a substance which produces severe lesions. Such damage may become apparent following direct application in subchronic (90 day) toxicity studies or following sub-acute (28 day) or chronic (two-year) toxicity tests. There is sufficient evidence to provide a strong presumption that human exposure to the material may result in developmental toxicity, generally on the basis of: - clear results in appropriate animal studies where effects have been observed in the absence of marked maternal toxicity, or at around the same dose levels as other toxic effects but which are not secondary non-specific consequences of the other toxic effects. Repeated exposure of 20 to 25 ppm N,N-dimethylacetamide (DMAc) (due to appreciable skin absorption) has caused jaundice in workers; evidence of liver damage and hepatic dysfunction is clear. Workers exposed to DMAc for 2-10 years showed abnormal liver function. Chronic exposure can result in cumulative liver and kidney damage. (Repeated dermal application of the liquid to dogs caused severe fatty infiltration of the liver; repeated exposure of rats to the vapour resulted in focal necrosis of the liver.) Teratogenic effects from dermal application were reported in rats when DMAc was applied on gestation days 10 and 11 at a total does of 2400 mg/kg body weight. When DMAc was administered to rats by gavage at a dosage of 400 mg/kg/day on days 6 through 19 of gestation, malformations of the heart, major blood vessels and oral cavity were seen. Maternal toxicity and post-implantation loss were also seen at this dose. Some evidence exists that a demethylation metabolite, acetamide, is a rat liver carcinogen.

N,N-Dimethylacetamide (DMAC), GC Headspace, Veritas Ultimate	**TOXICITY**	**IRRITATION**
	Dermal (rabbit) LD50: 2240 mg/kg[2]	Eye (Rodent - rabbit): 100mg - Mild
	Inhalation (Rat) LC50: 2.203 mg/l4h[2]	Eye: adverse effect observed (irritating)[1]
	Oral (Rat) LD50: 5000 mg/kg[2]	Skin (Rodent - rabbit): 10mg/24H - Mild
		Skin: no adverse effect observed (not irritating)[1]

Legend:	***1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2. Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances***

N,N-DIMETHYLACETAMIDE	The material may be irritating to the eye, with prolonged contact causing inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis. The material may cause skin irritation after prolonged or repeated exposure and may produce on contact skin redness, swelling, the production of vesicles, scaling and thickening of the skin.
N,N-Dimethylacetamide (DMAC), GC Headspace, Veritas Ultimate & N,N-DIMETHYLACETAMIDE	WARNING: Avoid the exposure of pregnant women to this substance. Females of child-bearing potential should avoid airborne exposure above the TLV and avoid skin contact. Animal experiments indicate embryotoxic and teratogenic (congenital malformation of the fetus) effects. The potential toxic properties of any amide should be carefully considered before use or exposure commences. N,N-dimethylacetamide (DMAC) is well-absorbed orally, by inhalation and percutaneously . It has a low acute toxicity by all routes of exposure. Direct application of the liquid results in "very slight" skin irritation and mild to moderate eye irritation. The critical effects of DMAC are respiratory tract irritation and hepatotoxicity. Repeated exposure to 40 ppm (145 mg/m3) DMAC, six hours/day, five days/week for six months, produced only marginal histopathological evidence of lung irritation in rats and dogs . At 100 ppm (362 mg/m3) and above, there was significant dose-dependent toxicity, with nasal and upper respiratory tract irritation or inflammation and liver damage as the predominant findings. Hepatotoxicity has also been reported in rats exposed to 288 ppm (1043 mg/m3) DMAC, six hours/day, five days/week for two weeks. Effects on the blood, bone marrow and testes were observed at high exposures. DMAC was not genotoxic in a limited range of ***in vitro*** and ***in vivo*** studies. No evidence of carcinogenicity was observed in the single inadequate gavage study available. Reproductive toxicity has not been observed in inhalation studies at levels which do not cause maternal

Continued...

toxicity.
The ACGIH documentation of the TLV for DMAC contains the statement: "Jaundice has been observed to result in workers exposed repeatedly at from 20 to 25 ppm DMAc, but appreciable skin penetration undoubtedly contributed to this effect" (ACGIH 1986-1987).
DMAC is well-absorbed orally, by inhalation and dermally. There are adequate data with which to evaluate the potential hazard to human health of this compound. DMAC has low toxicity by ingestion: the oral LD 50 ranges from 3000 mg/kg bw to 6000 mg/ kg in rats and > 5000 mg/Kg bw in rabbits. The chemical is harmful by dermal route and inhalation: dermal LD 50 values were 7500 mg/kg bw in rats, 9600 mg/Kg bw in mice, from 2100 mg/kg bw to 3600 mg/Kg bw in rabbits, but less than 940 mg/ kg bw in guinea pig. Inhalation LC 50 rat was 8.81 mg/l, 1h (~2.2 mg/l, 4h) and LC 50 mouse was 1.47 mg/l, 3.5 h. DMAC is not a skin sensitiser or skin irritant and was only slightly irritating to the eyes. In repeated dose studies (14 days to 2 years) NOAECs of 25 ppm (0.09 mg/l) and higher have been observed in inhalation studies with rats and mice. Effects observed included liver degeneration, some irritation to the respiratory tract and decreased body weight gain. A NOAEL oral of 300 mg/Kg, 24 months, has been observed in oral studies with rats. Observation included kidney and adrenal weights. DMAC does not show mutagenic effects in several ***in vitro*** and ***in vivo*** tests. UDS in human diploide fibroblast and a transgenic mouse mutation assay on liver tissue are negative. For the ***in vivo*** tests two dominant lethal assays with rat (dermal and inhalation) were negative and dominant lethal assays on mouse (dermal, inhalation and i.p.) were negative too.
A cytogenetic assay on human lymphocytes from 20 workers who were in contact with DMAC didn't reveal an increase in the frequency of chromosome aberration. DMAC was not carcinogenic in a two year drinking water study and a two year inhalation study in rats and to an 18 months inhalation study in mice. DMAC has been extensively studied for reproductive toxicity properties. Fertility was not affected when male rats had been exposed to up to 386 ppm (1.4 mg/l) in a 43 days inhalation study and in a 10 weeks one-generation inhalation study up to 300 ppm (1.08 mg/l) (females also were exposed). No effects in mice were observed in a sperm abnormalities test with exposures up to 700 ppm (2.52mg/l)for 6 weeks. Developmental toxicity was also investigated: the inhalation study in rats showed no adverse effects at the highest concentration, 300 ppm (1.08 mg/l), other than reduced maternal and fetal weight. The rabbit inhalation study showed a small increase in cardiac malformations at 570 ppm (2.052mg/l), in absence of maternal toxicity signs. The oral studies (rat and rabbit) indicate that high doses can cause both maternal and embryofetal toxicity. In an oral study on rat at 65, 160, 400 mg/kg bw/day the highest dose of DMAC was able to induce specific teratogenic effects such as great vessel malformations and anasarca at maternal toxic levels and the NOEL is 160 m g/kg bw/day. These findings were confirmed by a second oral study on rat performed at the same dose levels, from which a NOEL of 65-mg/kg bw/day can be derived. Due to the observed signs of specific developmental toxicity DMAC has to be considered a developmental toxicant. Effects seen in the dermal studies (rat and rabbit) occurred at high and generally maternotoxic doses. An ***in vitro*** embryotoxicity study has been performed and embryotoxicity and teratogenic effects were observed at the highest levels. A NOEC was derived, corresponding to an ***in vivo*** NOEL of 100 ppm as the concentration in the plasma after the exposure to 100 ppm in air in another study, may be similar to the NOEL observed in this study.
Liver impairment was observed in 19 out of 41 workers who had been working from 2 to 10 years in a spinning unit (airborne levels were not reported). Upper respiratory tract, gastric and nervous disturbances were complained.
Biological monitoring of workers exposed to DMAC in an acrylic fibre plant was performed: brief threshold limit value-level exposures and chronic low level exposure do not cause hepatotoxic clinical chemistry responses. A retrospective epidemiologic study was undertaken in 571 workers with a 12-months simultaneous exposure to acrylonitrile and no relationship between tumors and DMAC exposure was found.
Also dermal absorption and inhalation of DMAC in human volunteers was carried out. They were exposed twice to DMAC for 4 h at intervals of 96 h or above to 6.1 ppm). Mean dermal absorption was estimated to be 40.4% of the total DMAC uptake. DMAC vapour was significantly absorbed through the skin. Biological half lives of urinary MMAC were 9h for skin and 5.6 h for lung respectively

Acute Toxicity	✔	**Carcinogenicity**	✘
Skin Irritation/Corrosion	✘	**Reproductivity**	✔
Serious Eye Damage/Irritation	✔	**STOT - Single Exposure**	✘
Respiratory or Skin sensitisation	✘	**STOT - Repeated Exposure**	✔
Mutagenicity	✘	**Aspiration Hazard**	✘

Legend: ✘ ***– Data either not available or does not fill the criteria for classification***
✔ ***– Data available to make classification***

SECTION 12 Ecological information

Toxicity

N,N-Dimethylacetamide (DMAC), GC Headspace, Veritas Ultimate

Endpoint	Test Duration (hr)	Species	Value	Source
EC50	72h	Algae or other aquatic plants	>500mg/l	1
EC50	48h	Crustacea	>500mg/l	1
NOEC(ECx)	24h	Fish	5mg/l	1
LC50	96h	Fish	>500mg/l	2

Legend: ***Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data***

for N,N-dimethylacetamide (DMAC):
log Kow : -0.77
Environmental fate:
The results of the Level III Fugacity modelling indicate that if the chemical is released equally to the three major environmental compartments (air, water, and soil), it will mainly partition into water and soil, where the chemical has not been indicated to persist. If released to air, the Level III Fugacity model indicates a limited amount of the substance remains in air. An experimental vapour pressure of 174-267 Pa and Henry's Law constant of 1.33×10-3 Pa·m3/mol indicate that DMC can be highly volatile, but is unlikely to volatilise from water. Therefore, if released solely to air, little will remain in air (<1%) with the majority partitioning to soil and water (~99%). If released into water, DMAC is expected to weakly adsorb to suspended solids and sediment based upon a very low value of estimated log Koc of 0.97 and an experimental log Kow value of -0.77.
Volatilisation from water surfaces is expected to be an unimportant fate process based upon this compound's estimated Henry's Law constant. Thus, if water is a receiving medium, DMAC is expected to mainly remain in water. If released to soil, DMAC is expected to have very low adsorptivity to soil (i.e. expected to be mobile) based upon estimated log Koc and log Kow values. Volatilisation from moist soil surfaces seems to be an unimportant fate process based upon an estimated Henry's Law constant. This chemical may however rapidly volatilize from dry soil surfaces based upon its vapour pressure. Therefore, if released to soil, DMAC will mainly remain in this environmental compartment, which can be illustrated by the results of the Level III fugacity modelling.
The Level III Fugacity model indicates partitioning of the substance mainly into water and, soil. Once released into the environment**,** DMAC appears to be relatively nonpersistent in the environment The empirical biodegradation data, show 83% biodegradation over 28 days in a ready-biodegradation test for DMAC . This indicates that the half-life in water is not longer than 182 days (6 months).
A predicted atmospheric oxidation half-life value of 0.66-0.99 days demonstrates that in air, this chemical is likely to be rapidly oxidised. This compound is not expected to react, or react appreciably, with other photo-oxidative species in the atmosphere, such as O3 and NO3. Therefore, it is expected that reactions with hydroxyl radicals will be the most important fate process in the atmosphere for DMAC. With a half life of 0.66-0.99 days via reactions with hydroxyl radical, DMAC is not persistent in air based on the half-life criteria of .2 days specified in the ***Persistence and Bioaccumulation Regulations*** (Government of Canada 2000). However, since fugacity modelling indicates that the substance is not expected to greatly partition into air, its relatively rapid degradation in this medium is of limited significance.
Based on these modelled results and on the QSAR-based weight-of-evidence approach, the estimated timeframe and probability for biodegradation indicate that the substance is not persistent in water. Empirical and modelled data demonstrate that DMAC does not meet the persistence criteria for water, soil and sediment (half-lives in soil and water >=182 days and/or half-lives in sediment >=365 days).

Continued...

In addition, the long-range transport potential (LRTP) of DMAC from its point of release to air is estimated to be low according to the model prediction. The TaPL3 model was used to estimate Characteristic Travel Distance (CTD), defined as the maximum distance traveled by 63% of the substance; or in other words, the distance that 37% of the substance may travel beyond. Proposed CTDs of > 2000 km represent high LRTP, 700-2000 km as moderate, and < 700 km as low. This substance is expected to remain primarily in the areas close to its emission sources (CTD=152 km).
Potential for Bioaccumulation: Experimental and modelled logKow values suggest that DMAC does not have potential to bioaccumulate in the environment. Since no experimental data on bioaccumulation (BAF) or bioconcentration (BCF) of DMAc were available, a QSAR-based weight-of-evidence approach (Environment Canada 2007) was applied using the BAF and BCF models. The Modified GOBAS BAF middle trophic level model for fish predicted a Bioaccumulation Factor (BAF) of 1.00 L/kg, indicating that DMAC does not have the potential to bioconcentrate and biomagnify in the environment. Three BCF models also provide a weight-of-evidence to support the low bioconcentration potential of this substance. The weight of evidence indicates that DMAC does not meets the bioaccumulation criterion (BCF, BAF > 5000) as set out in the ***Persistence and Bioaccumulation Regulations*** (Government of Canada 2000).
Ecotoxicity:
In the Aquatic Compartment: There is modelled evidence that the substance is not acutely lethal to aquatic organisms at concentrations below 1 mg/L.
DMAC is not acutely toxic to aquatic organisms
Fish LC50 (96 h): Pimephales promelus >/= 1500 mg/l
Daphnia magna EC0 (48 h): 500 mg/l; NOEC >/= 1000 mg/l
Algae EC50 (72 h): Scenedesmus subspicatus >500 mg/l
Mysidopsis bahia LC50 (96 h): 966 mg/l; NOEC 320 mg/l
Chaetogammarus marinus NOEC: >/= 1000 mg/l
Bacteria MIC: E. coli 0.425 mg/l
Bacteria LOEC: pseudomonas putida 4850 mg/l (biomass, growth)
DO NOT discharge into sewer or waterways.

Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
N,N-dimethylacetamide	LOW	LOW

Bioaccumulative potential

Ingredient	Bioaccumulation
N,N-dimethylacetamide	LOW (BCF = 1.32)

Mobility in soil

Ingredient	Mobility
N,N-dimethylacetamide	LOW (Log KOC = 9.314)

Other adverse effects

No evidence of ozone depleting properties were found in the current literature.

SECTION 13 Disposal considerations

Waste treatment methods

Product / Packaging disposal	▸ Containers may still present a chemical hazard/ danger when empty. ▸ Return to supplier for reuse/ recycling if possible. Otherwise: ▸ If container can not be cleaned sufficiently well to ensure that residuals do not remain or if the container cannot be used to store the same product, then puncture containers, to prevent re-use, and bury at an authorised landfill. ▸ Where possible retain label warnings and SDS and observe all notices pertaining to the product. Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked. A Hierarchy of Controls seems to be common - the user should investigate: ▸ Reduction ▸ Reuse ▸ Recycling ▸ Disposal (if all else fails) This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. If it has been contaminated, it may be possible to reclaim the product by filtration, distillation or some other means. Shelf life considerations should also be applied in making decisions of this type. Note that properties of a material may change in use, and recycling or reuse may not always be appropriate. ▸ **DO NOT** allow wash water from cleaning or process equipment to enter drains. ▸ It may be necessary to collect all wash water for treatment before disposal. ▸ In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first. ▸ Where in doubt contact the responsible authority. ▸ Recycle wherever possible or consult manufacturer for recycling options. ▸ Consult State Land Waste Authority for disposal. ▸ Bury or incinerate residue at an approved site. ▸ Recycle containers if possible, or dispose of in an authorised landfill.

SECTION 14 Transport information

Labels Required

Marine Pollutant	NO

Land transport (DOT): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Air transport (ICAO-IATA / DGR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Sea transport (IMDG-Code / GGVSee): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

14.7. Maritime transport in bulk according to IMO instruments

14.7.1. Transport in bulk according to Annex II of MARPOL and the IBC code

Product name	Pollution Category	Ship Type

Continued...

N,N-Dimethylacetamide	Z	3

14.7.2. Transport in bulk in accordance with MARPOL Annex V and the IMSBC Code

Product name	Group
N,N-dimethylacetamide	Not Available

14.7.3. Transport in bulk in accordance with the IGC Code

Product name	Ship Type
N,N-dimethylacetamide	Not Available

SECTION 15 Regulatory information

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

N,N-dimethylacetamide is found on the following regulatory lists

Chemical Footprint Project - Chemicals of High Concern List
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs - Group 2B: Possibly carcinogenic to humans
US - California Proposition 65 - Carcinogens
US - California Proposition 65 - Reproductive Toxicity
US - California Safe Drinking Water and Toxic Enforcement Act of 1986 - Proposition 65 List
US - Massachusetts - Right To Know Listed Chemicals
US - New Jersey Right to Know Hazardous Substances
US - Pennsylvania - Hazardous Substance List
US DOE Temporary Emergency Exposure Limits (TEELs)
US New York City Community Right-to-Know: List of Hazardous Substances
US NIOSH Recommended Exposure Limits (RELs)
US OSHA Permissible Exposure Limits (PELs) Table Z-1
US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory
US TSCA Section 4/12 (b) - Sunset Dates/Status

Additional Regulatory Information

Not Applicable

Federal Regulations

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Section 311/312 hazard categories

Flammable (Gases, Aerosols, Liquids, or Solids)	Yes
Gas under pressure	No
Explosive	No
Self-heating	No
Pyrophoric (Liquid or Solid)	No
Pyrophoric Gas	No
Corrosive to metal	No
Oxidizer (Liquid, Solid or Gas)	No
Organic Peroxide	No
Self-reactive	No
In contact with water emits flammable gas	No
Combustible Dust	No
Carcinogenicity	No
Acute toxicity (any route of exposure)	Yes
Reproductive toxicity	Yes
Skin Corrosion or Irritation	No
Respiratory or Skin Sensitization	No
Serious eye damage or eye irritation	No
Specific target organ toxicity (single or repeated exposure)	Yes
Aspiration Hazard	No
Germ cell mutagenicity	No
Simple Asphyxiant	No
Hazards Not Otherwise Classified	No

US. EPA CERCLA Hazardous Substances and Reportable Quantities (40 CFR 302.4)

None Reported

Continued...

US. EPCRA Section 313 Toxic Release Inventory (TRI) (40 CFR 372)

None Reported

Additional Federal Regulatory Information

Not Applicable

State Regulations

US. California Proposition 65

WARNING: This product can expose you to chemicals including **N,N-dimethylacetamide**, which is known to the State of California to cause cancer, and **N,N-dimethylacetamide**, which is known to the State of California to cause birth defects or other reproductive harm. For more information, go to www.P65Warnings.ca.gov

Not Applicable

National Inventory Status

National Inventory	Status
Australia - AIIC / Australia Non-Industrial Use	Yes
Canada - DSL	Yes
Canada - NDSL	No (N,N-dimethylacetamide)
China - IECSC	Yes
Europe - EINEC / ELINCS / NLP	Yes
Japan - ENCS	Yes
Korea - KECI	Yes
New Zealand - NZIoC	Yes
Philippines - PICCS	Yes
USA - TSCA	All chemical substances in this product have been designated as TSCA Inventory 'Active'
Taiwan - TCSI	Yes
Mexico - INSQ	Yes
Vietnam - NCI	Yes
Russia - FBEPH	Yes
UAE - Control List (Banned/Restricted Substances)	No (N,N-dimethylacetamide)
Legend:	***Yes = All CAS declared ingredients are on the inventory*** ***No = One or more of the CAS listed ingredients are not on the inventory. These ingredients may be exempt or will require registration.***

SECTION 16 Other information

Revision Date	14/08/2025
Initial Date	28/07/2025

SDS Version Summary

Version	Date of Update	Sections Updated
1.2	14/08/2025	Hazards identification - Classification, Composition / information on ingredients - Ingredients

Other information

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

Definitions and abbreviations

- PC—TWA: Permissible Concentration-Time Weighted Average
- PC—STEL: Permissible Concentration-Short Term Exposure Limit
- IARC: International Agency for Research on Cancer
- ACGIH: American Conference of Governmental Industrial Hygienists
- STEL: Short Term Exposure Limit
- TEEL: Temporary Emergency Exposure Limit。
- IDLH: Immediately Dangerous to Life or Health Concentrations
- ES: Exposure Standard
- OSF: Odour Safety Factor
- NOAEL: No Observed Adverse Effect Level
- LOAEL: Lowest Observed Adverse Effect Level
- TLV: Threshold Limit Value
- LOD: Limit Of Detection
- OTV: Odour Threshold Value
- BCF: BioConcentration Factors
- BEI: Biological Exposure Index
- DNEL: Derived No-Effect Level
- PNEC: Predicted no-effect concentration
- MARPOL: International Convention for the Prevention of Pollution from Ships
- IMSBC: International Maritime Solid Bulk Cargoes Code
- IGC: International Gas Carrier Code
- IBC: International Bulk Chemical Code

- AIIC: Australian Inventory of Industrial Chemicals
- DSL: Domestic Substances List
- NDSL: Non-Domestic Substances List

Continued...

- IECSC: Inventory of Existing Chemical Substance in China
- EINECS: European INventory of Existing Commercial chemical Substances
- ELINCS: European List of Notified Chemical Substances
- NLP: No-Longer Polymers
- ENCS: Existing and New Chemical Substances Inventory
- KECI: Korea Existing Chemicals Inventory
- NZIoC: New Zealand Inventory of Chemicals
- PICCS: Philippine Inventory of Chemicals and Chemical Substances
- TSCA: Toxic Substances Control Act
- TCSI: Taiwan Chemical Substance Inventory
- INSQ: Inventario Nacional de Sustancias Químicas
- NCI: National Chemical Inventory
- FBEPH: Russian Register of Potentially Hazardous Chemical and Biological Substances