

Novachem Pty Ltd

Version No: 1.1

Safety Data Sheet according to WHS Regulations (Hazardous Chemicals) Amendment 2020 and ADG requirements

Chemwatch Hazard Alert Code: 3

Issue Date: **25/05/2023** Print Date: **25/05/2023** S.GHS.AUS.EN

SECTION 1 Identification of the substance / mixture and of the company / undertaking

Product Identifier

Product name	EDDP Perchlorate	
Chemical Name	EDDP Perchlorate (2-Ethyl-1,5-dimethyl-3,3-diphenylpyrrolinium Perchlorate)	
Synonyms	2-Ethylidene-1,5-dimethyl-3,3-diphenylpyrrolidine perchlorate, EDDP perchlorate	
Proper shipping name	TOXIC SOLID, ORGANIC, N.O.S. (2-Ethylidene-1,5-dimethyl-3,3-diphenylpyrrolidine perchlorate, EDDP perchlorate)	
Other means of identification	E-006	
CAS number	31161-17-8*	

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

Relevant identified uses Laboratory chemicals, Synthesis of substances

Details of the manufacturer or supplier of the safety data sheet

Registered company name	Novachem Pty Ltd	Novachem Pty Ltd
Address	25 Crissane Road, Heidelberg West Victoria 3081 Australia	25 Crissane Road, Heidelberg West Victoria 3081 Australia
Telephone	+61384151255	+61384151255
Fax	+61386250088	+61386250088
Website	www.novachem.com.au	www.novachem.com.au
Email	novachem@novachem.com.au	novachem@novachem.com.au

Emergency telephone number

Association / Organisation	Victorian Poisons Information Centre	Victorian Poisons Information Centre
Emergency telephone numbers	13 11 26	13 11 26
Other emergency telephone numbers	Not Available	Not Available

SECTION 2 Hazards identification

Classification of the substance or mixture

Poisons Schedule	Not Applicable	
Classification ^[1]	Specific Target Organ Toxicity - Single Exposure (Narcotic Effects) Category 3, Acute Toxicity (Oral) Category 3	
Legend:	1. Classified by Chernwatch; 2. Classification drawn from HCIS; 3. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI	

Label elements

Hazard pictogram(s)	
Signal word	Danger
Hazard statement(s)	
H336	May cause drowsiness or dizziness.
H301	Toxic if swallowed.

P264	Wash all exposed external body areas thoroughly after handling.	
P270	Do not eat, drink or smoke when using this product.	
P271	Use only outdoors or in a well-ventilated area.	
P261	Avoid breathing dust/fumes.	

Precautionary statement(s) Response

P301+P310	IF SWALLOWED: Immediately call a POISON CENTER/doctor/physician/first aider.	
P330	Rinse mouth.	
P312	Call a POISON CENTER/doctor/physician/first aider/if you feel unwell.	
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.	
100411040		

Precautionary statement(s) Storage

P405	Store locked up.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.

Precautionary statement(s) Disposal

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

SECTION 3 Composition / information on ingredients

Substances

CAS No		%[weight]	Name
31161-17-8	*	<=100	EDDP Perchlorate
Legend:	1. Classified by Chem * EU IOELVs available		rawn from Regulation (EU) No 1272/2008 - Annex VI; 4. Classification drawn from C&L

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: Flush skin and hair with running water (and soap if available). Seek medical attention in event of irritation.
Inhalation	 If fumes, aerosols or combustion products are inhaled remove from contaminated area. Other measures are usually unnecessary.
Ingestion	 IF SWALLOWED, REFER FOR MEDICAL ATTENTION, WHERE POSSIBLE, WITHOUT DELAY. For advice, contact a Poisons Information Centre or a doctor. Urgent hospital treatment is likely to be needed. In the mean time, qualified first-aid personnel should treat the patient following observation and employing supportive measures as indicated by the patient's condition. If the services of a medical officer or medical doctor are readily available, the patient should be placed in his/her care and a copy of the SDS should be provided. Further action will be the responsibility of the medical specialist. If medical attention is not available on the worksite or surroundings send the patient to a hospital together with a copy of the SDS. Where medical attention is not immediately available or where the patient is more than 15 minutes from a hospital or unless instructed otherwise: INDUCE vomiting with fingers down the back of the throat, ONLY IF CONSCIOUS. Lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration. NOTE: Wear a protective glove when inducing vomiting by mechanical means.

Indication of any immediate medical attention and special treatment needed

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 Firefighting measures

Extinguishing media

- There is no restriction on the type of extinguisher which may be used.
- Use extinguishing media suitable for surrounding area.

Special hazards arising from the substrate or mixture

Fire Incompatibility	None known.	
Advice for firefighters		
Fire Fighting	 Alert Fire Brigade and tell them location and nature of hazard. Wear breathing apparatus plus protective gloves in the event of a fire. Prevent, by any means available, spillage from entering drains or water courses. Use fire fighting procedures suitable for surrounding area. 	
Fire/Explosion Hazard	 Non combustible. Not considered a significant fire risk, however containers may burn. May emit poisonous fumes. 	
HAZCHEM	2X	

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. Clean up all spills immediately. Avoid contact with skin and eyes. Control personal contact with the substance, by using protective equipment.
Major Spills	

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.
Other information	 Store in original containers. Keep containers securely sealed. Store in a cool, dry, well-ventilated area. Store away from incompatible materials and foodstuff containers.

Conditions for safe storage, including any incompatibilities

Suitable container	 Lined metal can, lined metal pail/ can. Plastic pail. Polyliner drum. Packing as recommended by manufacturer.
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EDDP Perchlorate

	 For low viscosity materials Drums and jerricans must be of the non-removable head type. Where a can is to be used as an inner package, the can must have a screwed enclosure. For materials with a viscosity of at least 2680 cSt. (23 deg. C) and solids (between 15 C deg. and 40 deg C.): Removable head packaging; Cans with friction closures and low pressure tubes and cartridges may be used.
Storage incompatibility	None known

SECTION 8 Exposure controls / personal protection

Control parameters

Occupational Exposure Limits (0	JEL)				
INGREDIENT DATA					
ot Available					
Emergency Limits					
Ingredient	TEEL-1	TEEL-2		TEEL-3	
EDDP Perchlorate	Not Available	Not Available		Not Available	
Ingredient	Original IDLH		Revised IDLH		
EDDP Perchlorate	Not Available		Not Available	ot Available	
Occupational Exposure Banding	1				
Ingredient	Occupational Exposure Band Rating		Occupational Expos	ure Band Limit	
EDDP Perchlorate	E		≤ 0.1 ppm		
Notes:	Occupational exposure banding is a process of adverse health outcomes associated with expo range of exposure concentrations that are expe	sure. The output of this pr	ocess is an occupational		
Exposure controls					
Appropriate engineering controls	Engineering controls are used to remove a haz be highly effective in protecting workers and wi The basic types of engineering controls are: Process controls which involve changing the wi Enclosure and/or isolation of emission source w "adds" and "removes" air in the work environment	Il typically be independent ay a job activity or process which keeps a selected ha	of worker interactions to s is done to reduce the ris	provide this high level of protection. k.	
Individual protection measures, such as personal protective equipment					
Eye and face protection	 Safety glasses with side shields Chemical goggles. 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. 				
Skin protection	See Hand protection below				
Hands/feet protection	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. • Wear chemical protective gloves, e.g. PVC. • Wear safety footwear or safety gumboots, e.g. Rubber				
Body protection	See Other protection below				
	 Overalls. 				

Respiratory protection

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

Required Minimum Protection Factor	Half-Face Respirator	Full-Face Respirator	Powered Air Respirator
up to 10 x ES	P1 Air-line*	-	PAPR-P1 -
up to 50 x ES	Air-line**	P2	PAPR-P2

up to 100 x ES	-	P3	-
		Air-line*	-
100+ x ES	-	Air-line**	PAPR-P3

* - Negative pressure demand ** - Continuous flow

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)

· Respirators may be necessary when engineering and administrative controls do not adequately prevent exposures.

• The decision to use respiratory protection should be based on professional judgment that takes into account toxicity information, exposure measurement data, and frequency and likelihood of the worker's exposure - ensure users are not subject to high thermal loads which may result in heat stress or distress due to personal protective equipment (powered, positive flow, full face apparatus may be an option).

Published occupational exposure limits, where they exist, will assist in determining the adequacy of the selected respiratory protection. These may be government mandated or vendor recommended.

Certified respirators will be useful for protecting workers from inhalation of particulates when properly selected and fit tested as part of a complete respiratory protection program.
 Where protection from nuisance levels of dusts are desired, use type N95 (US) or type P1 (EN143) dust masks. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU)

· Use approved positive flow mask if significant quantities of dust becomes airborne.

 \cdot Try to avoid creating dust conditions.

SECTION 9 Physical and chemical properties

Information on basic physical and chemical properties Not Available Appearance Physical state Solid Relative density (Water = 1) Not Available Partition coefficient n-octanol Not Available Not Available Odour / water Auto-ignition temperature (°C) Odour threshold Not Available Not Available Decomposition pH (as supplied) Not Available Not Available temperature (°C) Melting point / freezing point Not Available Viscosity (cSt) Not Available (°C) Initial boiling point and boiling Not Available Molecular weight (g/mol) 377.86 range (°C) Flash point (°C) Not Available Taste Not Available Not Available **Explosive properties** Not Available Evaporation rate Flammability Not Available **Oxidising properties** Not Available Surface Tension (dyn/cm or Upper Explosive Limit (%) Not Available Not Applicable mN/m) Lower Explosive Limit (%) Not Available Volatile Component (%vol) Not Available Vapour pressure (kPa) Not Available Not Available Gas group Solubility in water Not Available pH as a solution (1%) Not Available Vapour density (Air = 1) Not Available VOC a/L 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

Inhaled

The material is not thought to produce either adverse health effects or irritation of the respiratory tract following inhalation (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 exposu setting. Inhalation of vapours may cause drowsiness and dizz co-ordination, and vertigo.			
Ingestion	Toxic effects may result from the accidental ingestion fatal or may produce serious damage to the health of		experiments ir	ndicate that ingestion of less than 40 gram may be
Skin Contact	Skin contact is not thought to produce harmful health effects (as classified under EC Directives using animal models). Systemic harm, however, has been identified following exposure of animals by at least one other route and the material may still produce health damage following entry through wounds, lesions or abrasions. Open cuts, abraded or irritated skin should not be exposed to this material Entry into the blood-stream, through, for example, cuts, abrasions 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	Although the material is not thought to be an irritant (as classified by EC Directives), direct contact with the eye may cause transient discomfort characterised by tearing or conjunctival redness (as with windburn). Slight abrasive damage may also result.			
Chronic	Long-term exposure to the product is not thought to produce chronic effects adverse to the health (as classified by EC Directives using animal models); nevertheless exposure by all routes should be minimised as a matter of course.			
	ΤΟΧΙΟΙΤΥ	IRR	RITATION	
EDDP Perchlorate	Not Available		Available	
Legend:	1. Value obtained from Europe ECHA Registered Sub specified data extracted from RTECS - Register of To.			ned from manufacturer's SDS. Unless otherwise
Acute Toxicity	×	Carcin	nogenicity	×
Skin Irritation/Corrosion	×	Repro	oductivity	×
Serious Eye Damage/Irritation	×	STOT - Single	Exposure	✓
Respiratory or Skin sensitisation	×	STOT - Repeated	Exposure	×
Mutagenicity	×	Aspiratio	on Hazard	×

Data either not available or does not fill the criteria for classification
 Data available to make classification

SECTION 12 Ecological information

Toxicity					
	Endpoint	Test Duration (hr)	Species	Value	Source
EDDP Perchlorate	Not Available	Not Available	Not Available	Not Available	Not Available
Legend:	Ecotox databa		CHA Registered Substances - Ecotoxicological Info C Aquatic Hazard Assessment Data 6. NITE (Japan		

Legend:

DO NOT discharge into sewer or waterways.

Persistence and degradability

Ingredient Pe	ersistence: Water/Soil	Persistence: Air
No	o Data available for all ingredients	No Data available for all ingredients

Bioaccumulative potential

Ingredient	Bioaccumulation
	No Data available for all ingredients
Mobility in soil	
Ingredient	Mobility
	No Data available for all ingredients

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.

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EDDP Perchlorate

	 Recycle wherever possible or consult manufacturer for recycling options. Consult State Land Waste Management Authority for disposal. Bury residue in an authorised landfill. Recycle containers if possible, or dispose of in an authorised landfill.
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SECTION 14 Transport information

Labels Required

	6
Marine Pollutant	NO
HAZCHEM	2X

Land transport (ADG)

UN number or ID number	2811		
UN proper shipping name	TOXIC SOLID, ORGANIC, N.O.S. (2-Ethylidene-1,5-dimethyl-3,3-diphenylpyrrolidine perchlorate, EDDP perchlorate)		
Transport hazard class(es)	Class 6.1 Subsidiary risk Not App	licable	
Packing group	III		
Environmental hazard	Not Applicable		
Special precautions for user	Special provisions223Limited quantity5 kg	274	

Air transport (ICAO-IATA / DGR)

• •				
UN number	2811			
UN proper shipping name	Toxic solid, organic, n.o.s. * (2-Ethylidene-1,5-dimethyl-3,3-diphenylpyrrolidine perchlorate, EDDP perchlorate)			
	ICAO/IATA Class	6.1		
Transport hazard class(es)	ICAO / IATA Subrisk	Not Applicable		
	ERG Code	6L		
Packing group	Ш			
Environmental hazard	Not Applicable			
Special precautions for user	Special provisions		A3 A5	
	Cargo Only Packing Instructions		677	
	Cargo Only Maximum Qty / Pack		200 kg	
	Passenger and Cargo Packing Instructions		670	
	Passenger and Cargo Maximum Qty / Pack		100 kg	
	Passenger and Cargo Limited Quantity Packing Instructions		Y645	
	Passenger and Cargo Limited Maximum Qty / Pack		10 kg	

Sea transport (IMDG-Code / GGVSee)

UN number	2811			
UN proper shipping name	TOXIC SOLID, ORGANIC, N.O.S. (2-Ethylidene-1,5-dimethyl-3,3-diphenylpyrrolidine perchlorate, EDDP perchlorate)			
Transport hazard class(es)	IMDG Class6.1IMDG SubriskNot Applicable			
Packing group	III			
Environmental hazard	Not Applicable	Not Applicable		
Special precautions for user	EMS Number Special provisions Limited Quantities	F-A, S-A 223 274 5 kg		

Transport in bulk according to Annex II of MARPOL and the IBC code Not Applicable

Group

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

Product name

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EDDP Perchlorate

Product name	Group	
EDDP Perchlorate	Not Available	
ransport in bulk in acco	ance with the IGC Code	
ransport in bulk in acco Product name	ance with the IGC Code Ship Type	

SECTION 15 Regulatory information

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

EDDP Perchlorate is found on the following regulatory lists

Not Applicable

National Inventory Status

National Inventory	Status
Australia - AIIC / Australia Non-Industrial Use	No (EDDP Perchlorate)
Canada - DSL	No (EDDP Perchlorate)
Canada - NDSL	No (EDDP Perchlorate)
China - IECSC	No (EDDP Perchlorate)
Europe - EINEC / ELINCS / NLP	No (EDDP Perchlorate)
Japan - ENCS	No (EDDP Perchlorate)
Korea - KECI	No (EDDP Perchlorate)
New Zealand - NZIoC	No (EDDP Perchlorate)
Philippines - PICCS	No (EDDP Perchlorate)
USA - TSCA	No (EDDP Perchlorate)
Taiwan - TCSI	No (EDDP Perchlorate)
Mexico - INSQ	No (EDDP Perchlorate)
Vietnam - NCI	No (EDDP Perchlorate)
Russia - FBEPH	No (EDDP Perchlorate)
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	25/05/2023
Initial Date	25/05/2023

Other information

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

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

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