SAFETY DATA SHEET

COMMAND PLUS 600 EC

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	2024/05/10	50001576	Date of first issue: 2024/05/10

1. PRODUCT AND COMPANY IDENTIFICATION

Product name	:	COMMAND PLUS 600 EC
Other means of identification	:	Clomazone + Propanil 200/400 g/L EC

Recommended use of the chemical and restrictions on use

Recommended use	:	Can be used as herbicide only.
Restrictions on use	:	Use as recommended by the label.

Manufacturer or supplier's details

Company	:	FMC Agro Philippines, Inc.
Address	:	Unit 10-A Six/NEO Bldg., 5th Avenue cor. 26th Street, 1634 Bonifacio Global City, Taguig City Philippines
Telephone	:	+63279443400
Telefax	:	+63279443465
E-mail address	:	SDS-Info@fmc.com
National Poison Control Center	:	U.P. PGH, Padre Faura, Manila (+63) 2 8524 1078 East Avenue, Quezon City (+63) 2 8928 0611 Southern Philippines Medical Center (+63) 82 227 2731 (formerly Davao Medical Center Davao City)
Emergency telephone	:	For leak, fire, spill or accident emergencies, call: +(63) 2-395-3308 (CHEMTREC) Toll-free mobile enabled: 1800 1 322 0553 (CHEMTREC) Medical emergency: All other countries: +1 651 / 632-6793 (Collect)

2. HAZARDS IDENTIFICATION

GHS Classification

Flammable liquids	:	Category 3
Acute toxicity (Oral)	:	Category 4
Acute toxicity (Inhalation)	:	Category 4
Carcinogenicity	:	Category 2

Short-term (acute) aquatic hazard	:	Category 1
Long-term (chronic) aquatic hazard	:	Category 1

GHS label elements

Hazard pictograms :

Signal Word : Warning

Hazard Statements :
H226 Flammable liquid and vapor.
H302 + H332 Harmful if swallowed or if inhaled.
H351 Suspected of causing cancer.
H410 Very toxic to aquatic life with long lasting effects.

Precautionary Statements :

Prevention:

P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P210 Keep away from heat/ sparks/ open flames/ hot surfaces. No smoking.
P233 Keep container tightly closed.
P240 Ground/bond container and receiving equipment.
P241 Use explosion-proof electrical/ ventilating/ lighting/ equipment.
P242 Use only non-sparking tools.
P243 Take precautionary measures against static discharge.
P261 Avoid breathing mist or vapors.
P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.
P273 Avoid release to the environment.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response:

P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell. Rinse mouth.
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor if you feel unwell.
P308 + P313 IF exposed or concerned: Get medical advice/ attention.
P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.
P391 Collect spillage.

Storage:

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

Disposal:

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

Other hazards which do not result in classification

None known.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Components

Chemical name	CAS-No.	Concentration (% w/w)
propanil (ISO)	709-98-8	35.4
Clomazone	81777-89-1	17.7
cyclohexanone	108-94-1	>= 10 -< 20
Solvent naphtha (petroleum), light arom.; Low boiling point naphtha -unspecified	64742-95-6	>= 10 -< 20
Dodecylbenzenesulfonic acid, diethanolamine salt	26545-53-9	>= 10 -< 20
Ethoxylated oleyl amine, dodecylbenzene-sulhponic salt	66467-20-7	>= 1 -< 3
2-butoxyethanol	111-76-2	>= 1 -< 10

4. FIRST AID MEASURES

General advice : Move out of dangerous area.
Show this safety data sheet to the doctor in attendance.
Do not leave the victim unattended.

If inhaled : If unconscious, place in recovery position and seek medical advice.
If symptoms persist, call a physician.

In case of skin contact : If on skin, rinse well with water.
If on clothes, remove clothes.

In case of eye contact : Flush eyes with water as a precaution.
Remove contact lenses.
Protect unharmed eye.
Keep eye wide open while rinsing.
If eye irritation persists, consult a specialist.

If swallowed : Keep respiratory tract clear.
Do not give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.
Take victim immediately to hospital.

Most important symptoms and effects, both acute and delayed	:	Harmful if swallowed or if inhaled. Suspected of causing cancer.
Notes to physician	:	Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media	:	Alcohol-resistant foam Carbon dioxide (CO2) Dry chemical Water spray
Unsuitable extinguishing media	:	High volume water jet
Specific hazards during fire fighting	:	Do not allow run-off from fire fighting to enter drains or water courses.
Hazardous combustion products	:	Thermal decomposition can lead to release of irritating gases and vapors. Nitrogen oxides (NOx) Carbon oxides Chlorine compounds
Specific extinguishing methods	:	Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. For safety reasons in case of fire, cans should be stored separately in closed containments. Use a water spray to cool fully closed containers.
Special protective equipment for fire-fighters	:	Wear self-contained breathing apparatus for firefighting if necessary.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	:	Use personal protective equipment. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas.
Environmental precautions	:	Prevent product from entering drains. Prevent further leakage or spillage if safe to do so. If the product contaminates rivers and lakes or drains inform respective authorities.
Methods and materials for containment and cleaning up	:	Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).

7. HANDLING AND STORAGE

Advice on protection against fire and explosion : Do not spray on a naked flame or any incandescent material.
Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors).
Keep away from open flames, hot surfaces and sources of ignition.

Advice on safe handling : Avoid formation of aerosol.
Do not breathe vapors/dust.
Avoid exposure - obtain special instructions before use.
Avoid contact with skin and eyes.
For personal protection see section 8.
Smoking, eating and drinking should be prohibited in the application area.
Take precautionary measures against static discharges.
Provide sufficient air exchange and/or exhaust in work rooms.
Open drum carefully as content may be under pressure.
Dispose of rinse water in accordance with local and national regulations.

Conditions for safe storage : No smoking.
Keep container tightly closed in a dry and well-ventilated place.
Containers which are opened must be carefully resealed and kept upright to prevent leakage.
Observe label precautions.
Electrical installations / working materials must comply with the technological safety standards.

Further information on storage stability : No decomposition if stored and applied as directed.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
cyclohexanone	108-94-1	TWA	50 ppm 200 mg/m3	PH OEL
		TWA	20 ppm	ACGIH
		STEL	50 ppm	ACGIH
Solvent naphtha (petroleum), light arom.; Low boiling point naphtha -unspecified	64742-95-6	TWA	500 ppm 2,000 mg/m3	PH OEL
		TWA	200 mg/m3 (total hydrocarbon vapor)	ACGIH
2-butoxyethanol	111-76-2	TWA	50 ppm 240 mg/m3	PH OEL

	Further information: Skin			
		TWA	20 ppm	ACGIH

Biological occupational exposure limits

Components	CAS-No.	Control parameters	Biological specimen	Sampling time	Permissible concentration	Basis
cyclohexanone	108-94-1	1,2-Cyclohexanediol	Urine	End of shift at end of workweek	80 mg/l	ACGIH BEI
		Cyclohexanol	Urine	End of shift (As soon as possible after exposure ceases)	8 mg/l	ACGIH BEI
2-butoxyethanol	111-76-2	Butoxyacetic acid (BAA)	Urine	End of shift (As soon as possible after exposure ceases)	200 mg/g creatinine	ACGIH BEI

Personal protective equipment

Respiratory protection : In case of mist, spray or aerosol exposure wear suitable personal respiratory protection and protective suit.

Hand protection

Material : Wear chemical resistant gloves, such as barrier laminate, butyl rubber or nitrile rubber.

Remarks : The suitability for a specific workplace should be discussed with the producers of the protective gloves.

Eye protection : Eye wash bottle with pure water
Tightly fitting safety goggles

Skin and body protection : Impervious clothing
Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Hygiene measures : When using do not eat or drink.
When using do not smoke.
Wash hands before breaks and at the end of workday.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state : liquid

Form : viscous

Color	:	dark brown
Odor	:	mild, aromatic
pH	:	5.5
Melting point/freezing point	:	not determined
Boiling point/boiling range	:	not determined
Flash point	:	60 °C
Self-ignition	:	No data available
Density	:	1.13 g/cm3 (20 °C)
Bulk density	:	9.41 lb/gal
Solubility(ies)		
Water solubility	:	emulsifiable
Partition coefficient: n-octanol/water	:	Not applicable
Viscosity		
Viscosity, kinematic	:	not determined
Explosive properties	:	Not explosive
Oxidizing properties	:	The product is not oxidizing.

10. STABILITY AND REACTIVITY

Reactivity	:	No decomposition if stored and applied as directed.
Chemical stability	:	No decomposition if stored and applied as directed.
Possibility of hazardous reactions	:	No decomposition if stored and applied as directed. Vapors may form explosive mixture with air.
Conditions to avoid	:	Heat, flames and sparks.
Incompatible materials	:	Strong acids Strong oxidizing agents Strong bases

Hazardous decomposition products : Stable under recommended storage conditions.

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Harmful if swallowed or if inhaled.

Product:

Acute oral toxicity : LD50 (Rat, male and female): 1,087 mg/kg
Method: OECD Test Guideline 401
Remarks: Based on data from similar materials

Acute inhalation toxicity : LC50 (Rat, male and female): 3.77 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 403
Remarks: Based on data from similar materials

Acute dermal toxicity : LD50 (Rat, male and female): > 2,000 mg/kg
Method: OECD Test Guideline 402
Assessment: The substance or mixture has no acute dermal toxicity
Remarks: Based on data from similar materials

Components:

propanil (ISO):

Acute oral toxicity : LD50 (Rat): 2,500 mg/kg

Acute inhalation toxicity : LC50 (Rat): > 1.28 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 403
Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity : LD50 (Rat): > 2,500 mg/kg
Method: OECD Test Guideline 402
Assessment: The substance or mixture has no acute dermal toxicity

Clomazone:

Acute oral toxicity : LD50 (Rat, female): 768 mg/kg
Method: OECD Test Guideline 425

LD50 (Rat, female): 300 - 2,000 mg/kg
Method: OECD Test Guideline 423
Target Organs: Liver
Assessment: The component/mixture is moderately toxic after single ingestion.

LD50 (Rat, female): 1,564 mg/kg

Symptoms: ataxia

Acute inhalation toxicity : LC50 (Rat): > 5.02 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 403

LC50 (Rat, female): 4.23 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: EPA OPP 81 - 3
Symptoms: Breathing difficulties

Acute dermal toxicity : LD50 (Rabbit, male and female): > 2,000 mg/kg
Method: US EPA Test Guideline OPP 81-2
Assessment: The component/mixture is minimally toxic after single contact with skin.
Remarks: no mortality

cyclohexanone:

Acute oral toxicity : LD50 (Rat): 1,890 mg/kg

Acute inhalation toxicity : LC50 (Rat, male and female): > 6.2 mg/l
Exposure time: 4 h
Test atmosphere: vapor
Assessment: The component/mixture is moderately toxic after short term inhalation.

Solvent naphtha (petroleum), light arom.; Low boiling point naphtha -unspecified:

Acute oral toxicity : LD50 (Rat, female): 3,492 mg/kg
Method: OECD Test Guideline 401

LD50 (Rat, male): 6,984 mg/kg
Method: OECD Test Guideline 401

Acute inhalation toxicity : LC50 (Rat, male and female): > 6.193 mg/l
Exposure time: 4 h
Test atmosphere: vapor
Assessment: The substance or mixture has no acute inhalation toxicity
Remarks: no mortality

Acute dermal toxicity : LD50 (Rabbit, male and female): > 3,160 mg/kg
Assessment: The component/mixture is minimally toxic after single contact with skin.

Dodecylbenzenesulfonic acid, diethanolamine salt:

Acute oral toxicity : LD50 (Rat): 775 mg/kg
Remarks: Based on data from similar materials

Acute dermal toxicity : LD50 (Rat): > 2,000 mg/kg
Assessment: The substance or mixture has no acute dermal toxicity

Ethoxylated oleyl amine, dodecylbenzenesulhponic salt:

Acute oral toxicity	:	LD50 (Rat, male and female): 1,570 mg/kg Remarks: Based on data from similar materials
Acute dermal toxicity	:	LD50 (Rabbit, male): 2,504 mg/kg Method: OECD Test Guideline 402 LD50 (Rabbit, female): 2,881 mg/kg Method: OECD Test Guideline 402

2-butoxyethanol:

Acute oral toxicity	:	LD50 (Rat, male and female): 1,414 mg/kg Method: OECD Test Guideline 401
Acute inhalation toxicity	:	LC50 (Guinea pig, male and female): > 2.25 mg/l Exposure time: 4 h Test atmosphere: vapor Method: OECD Test Guideline 433 Assessment: The substance or mixture has no acute inhalation toxicity
Acute dermal toxicity	:	LD50 (Guinea pig, male and female): > 2,000 mg/kg Method: OECD Test Guideline 402 Assessment: The substance or mixture has no acute dermal toxicity

Skin corrosion/irritation

Not classified based on available information.

Product:

Species	:	Rabbit
Method	:	OECD Test Guideline 404
Result	:	No skin irritation
Remarks	:	Minimal effects that do not meet the threshold for classification. Based on data from similar materials

Components:

propanil (ISO):

Species	:	Rabbit
Result	:	No skin irritation

Clomazone:

Species	:	Rabbit
Assessment	:	Not classified as irritant
Method	:	OECD Test Guideline 404
Result	:	slight or no skin irritation.

cyclohexanone:

Species	:	Rabbit
Method	:	OECD Test Guideline 404
Result	:	Skin irritation
Remarks	:	Extremely corrosive and destructive to tissue.

Solvent naphtha (petroleum), light arom.; Low boiling point naphtha -unspecified:

Species	:	Rabbit
Method	:	OECD Test Guideline 404
Result	:	Mild skin irritation

Dodecylbenzenesulfonic acid, diethanolamine salt:

Species	:	Rabbit
Method	:	OECD Test Guideline 404
Result	:	Skin irritation
Remarks	:	Based on data from similar materials

Ethoxylated oleyl amine, dodecylbenzenesulhponic salt:

Species	:	reconstructed human epidermis (RhE)
Method	:	OECD Test Guideline 431
Result	:	Skin irritation

2-butoxyethanol:

Species	:	Rabbit
Method	:	Regulation (EC) No. 440/2008, Annex, B.4
Result	:	Skin irritation

Serious eye damage/eye irritation

Not classified based on available information.

Product:

Species	:	Rabbit
Result	:	No eye irritation
Method	:	OECD Test Guideline 405
Remarks	:	Minimal effects that do not meet the threshold for classification. Based on data from similar materials

Components:

propanil (ISO):

Species	:	Rabbit
Result	:	No eye irritation

Clomazone:

Species	:	Rabbit
Result	:	Slight or no eye irritation
Assessment	:	Not classified as irritant
Method	:	OECD Test Guideline 405
GLP	:	yes

cyclohexanone:

Result	:	Irreversible effects on the eye
Method	:	Hen egg chorioallantoic membrane bioassay
Remarks	:	May cause irreversible eye damage.

Solvent naphtha (petroleum), light arom.; Low boiling point naphtha -unspecified:

Species	:	Rabbit
Result	:	No eye irritation

Dodecylbenzenesulfonic acid, diethanolamine salt:

Species	:	Rabbit
Result	:	Irreversible effects on the eye
Method	:	OECD Test Guideline 405
Remarks	:	Based on data from similar materials

Ethoxylated oleyl amine, dodecylbenzenesulhponic salt:

Species	:	Rabbit
Result	:	Irreversible effects on the eye
Method	:	OECD Test Guideline 405

2-butoxyethanol:

Species	:	Rabbit
Result	:	Irritation to eyes, reversing within 21 days
Method	:	OECD Test Guideline 405

Respiratory or skin sensitization

Skin sensitization

Not classified based on available information.

Respiratory sensitization

Not classified based on available information.

Product:

Test Type	:	Magnussen-Kligman test
Species	:	Guinea pig
Method	:	OECD Test Guideline 406
Result	:	Not a skin sensitizer.
Remarks	:	Based on data from similar materials

Components:

propanil (ISO):

Species	:	Guinea pig
Result	:	Not a skin sensitizer.

Clomazone:

Species	:	Guinea pig

Assessment	:	Not a skin sensitizer.
Method	:	US EPA Test Guideline OPP 81-6
Result	:	Not a skin sensitizer.

Solvent naphtha (petroleum), light arom.; Low boiling point naphtha -unspecified:

Test Type	:	Maximization Test
Routes of exposure	:	Skin contact
Species	:	Guinea pig
Method	:	OECD Test Guideline 406
Result	:	Not a skin sensitizer.

Dodecylbenzenesulfonic acid, diethanolamine salt:

Test Type	:	Buehler Test
Species	:	Guinea pig
Result	:	Not a skin sensitizer.
Remarks	:	Based on data from similar materials

Ethoxylated oleyl amine, dodecylbenzenesulhponic salt:

Test Type	:	Maximization Test
Routes of exposure	:	Skin contact
Species	:	Guinea pig
Method	:	OECD Test Guideline 406
Result	:	Not a skin sensitizer.
Remarks	:	Based on data from similar materials

2-butoxyethanol:

Test Type	:	Maximization Test
Species	:	Guinea pig
Method	:	OECD Test Guideline 406
Result	:	Does not cause skin sensitization.

Germ cell mutagenicity

Not classified based on available information.

Components:

Clomazone:

Genotoxicity in vitro	:	Test Type: Ames test Test system: Salmonella typhimurium Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 471 Result: negative GLP: yes Test system: Chinese hamster ovary cells Metabolic activation: with and without metabolic activation Result: negative
Genotoxicity in vivo	:	Test Type: Cytogenetic assay Species: Rat Method: OECD Test Guideline 473 Result: negative

cyclohexanone:

Genotoxicity in vitro	:	Test Type: in vitro DNA damage and/or repair study Test system: human diploid fibroblasts Method: OECD Test Guideline 482 Result: negative Test Type: reverse mutation assay Method: OECD Test Guideline 471 Result: negative Test Type: In vitro mammalian cell gene mutation test Method: OECD Test Guideline 476 Result: negative
Genotoxicity in vivo	:	Test Type: chromosome aberration assay Species: Rat (male and female) Application Route: inhalation (vapor) Method: OECD Test Guideline 475 Result: negative Test Type: dominant lethal test Species: Rat (male and female) Application Route: inhalation (vapor) Method: OECD Test Guideline 478 Result: negative Species: Drosophila melanogaster (vinegar fly) (male and female) Application Route: Inhalation Method: OECD Test Guideline 477 Result: negative
Germ cell mutagenicity - Assessment	:	Weight of evidence does not support classification as a germ cell mutagen.

Solvent naphtha (petroleum), light arom.; Low boiling point naphtha -unspecified:

Genotoxicity in vitro	:	Test Type: in vitro DNA damage and/or repair study Test system: Chinese hamster ovary cells Metabolic activation: with and without metabolic activation Result: negative Test Type: reverse mutation assay Metabolic activation: with and without metabolic activation Result: negative
Genotoxicity in vivo	:	Test Type: Bone marrow chromosome aberration. Species: Rat (male and female) Application Route: Inhalation Result: negative

Dodecylbenzenesulfonic acid, diethanolamine salt:

Genotoxicity in vitro	:	Test Type: Ames test

Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative
Remarks: Based on data from similar materials

Genotoxicity in vivo : Test Type: Micronucleus test
Species: Mouse
Application Route: Intraperitoneal injection
Result: negative
Remarks: Based on data from similar materials

Ethoxylated oleyl amine, dodecylbenzenesulhponic salt:

Genotoxicity in vitro : Test Type: reverse mutation assay
Method: Mutagenicity (Salmonella typhimurium - reverse mutation assay)
Result: negative
Remarks: Based on data from similar materials

Test Type: gene mutation test
Test system: Chinese hamster ovary cells
Result: negative
Remarks: Based on data from similar materials

Genotoxicity in vivo : Test Type: Rodent Dominant Lethal Assay
Species: Mouse (male)
Result: negative
Remarks: Based on data from similar materials

2-butoxyethanol:

Genotoxicity in vitro : Test Type: reverse mutation assay
Result: negative

Test Type: Chromosome aberration test in vitro
Result: negative

Test Type: gene mutation test
Result: negative

Genotoxicity in vivo : Test Type: In vivo micronucleus test
Species: Rat (male)
Application Route: Intraperitoneal injection
Result: negative

Germ cell mutagenicity - Assessment : Weight of evidence does not support classification as a germ cell mutagen.

Carcinogenicity

Suspected of causing cancer.

Components:

Clomazone:

Species : Rat, male and female
Application Route : Oral

Exposure time	:	2 Years
Result	:	negative

Species	:	Mouse
Method	:	OECD Test Guideline 453
Result	:	negative

cyclohexanone:

Species	:	Rat
Application Route	:	Oral
Exposure time	:	104 weeks
Dose	:	(462 and 910 mg/kg/d
LOAEL	:	3,300 ppm
Result	:	positive

Carcinogenicity - Assessment	:	Weight of evidence does not support classification as a carcinogen

Solvent naphtha (petroleum), light arom.; Low boiling point naphtha -unspecified:

Carcinogenicity - Assessment	:	Limited evidence of carcinogenicity in animal studies

2-butoxyethanol:

Species	:	Mouse, male
Application Route	:	inhalation (vapor)
Exposure time	:	2 Years
Dose	:	0, 62.5, 125, 250 ppm
NOAEC	:	125 ppm
LOAEC	:	250 ppm
Result	:	negative

Species	:	Mouse, female
Application Route	:	inhalation (vapor)
Exposure time	:	2 Years
Dose	:	0, 62.5, 125, 250 ppm
NOAEC	:	125 ppm
LOAEC	:	250 ppm
Result	:	negative

Carcinogenicity - Assessment	:	Weight of evidence does not support classification as a carcinogen

Reproductive toxicity

Not classified based on available information.

Components:

Clomazone:

Effects on fertility	:	Test Type: Two-generation study Species: Rat, male and female Application Route: Oral Result: negative

Effects on fetal development	:	Test Type: Embryo-fetal development Species: Rat Application Route: Oral Symptoms: Maternal effects. Result: negative Test Type: Embryo-fetal development Species: Rabbit Application Route: Oral Symptoms: Maternal effects. Result: negative

cyclohexanone:

Effects on fertility	:	Test Type: Two-generation study Species: Rat Application Route: inhalation (vapor) Dose: 1.02, 2.04, 4.1 mg/l General Toxicity Parent: NOAEC: 4.1 mg/l General Toxicity F1: NOAEC: 2.04 mg/l General Toxicity F2: NOAEC: 2.04 mg/l Result: negative
Effects on fetal development	:	Species: Rabbit Application Route: Oral Dose: 50, 250, 500 mg/kg b.w. General Toxicity Maternal: NOAEL: 250 mg/kg body weight Teratogenicity: NOAEL: 500 mg/kg body weight Method: OECD Test Guideline 414 Result: No teratogenic effects.
Reproductive toxicity - Assessment	:	Animal testing did not show any effects on fertility.

Solvent naphtha (petroleum), light arom.; Low boiling point naphtha -unspecified:

Effects on fertility	:	Test Type: Three-generation study Species: Rat Application Route: inhalation (vapor) Fertility: NOAEC Mating/Fertility: 7.5 mg/l Result: negative Remarks: Based on data from similar materials
Effects on fetal development	:	Species: Mouse Application Route: inhalation (vapor) General Toxicity Maternal: LOAEC: 500 part per million Symptoms: Maternal effects.

2-butoxyethanol:

Effects on fertility	:	Species: Mouse, male and female Application Route: Oral Dose: 720, 1340, 2050 mg/kg bw/day General Toxicity Parent: LOAEL: 720 mg/kg bw/day General Toxicity F1: LOAEL: 1,340 mg/kg bw/day General Toxicity F2: LOAEL: 1,340 mg/kg bw/day

Result: negative

Effects on fetal development : Test Type: reproductive and developmental toxicity study
Species: Rat
Application Route: Oral
Dose: 0, 30, 100, 200 300, mg/kgbw
General Toxicity Maternal: LOAEL: 100 mg/kg bw/day
Embryo-fetal toxicity.: LOAEC F1: 300 mg/kg bw/day
Result: negative

Reproductive toxicity - Assessment : Weight of evidence does not support classification for reproductive toxicity

STOT-single exposure

Not classified based on available information.

Components:

Solvent naphtha (petroleum), light arom.; Low boiling point naphtha -unspecified:

Assessment : May cause respiratory irritation.
May cause drowsiness or dizziness.

2-butoxyethanol:

Assessment : The substance or mixture is not classified as specific target organ toxicant, single exposure.

STOT-repeated exposure

Not classified based on available information.

Components:

cyclohexanone:

Assessment : The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Solvent naphtha (petroleum), light arom.; Low boiling point naphtha -unspecified:

Assessment : The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Repeated dose toxicity

Components:

Clomazone:

Species : Rat, male and female
NOEL : 1000 ppm
Application Route : Oral
Exposure time : 90 days
Symptoms : increased liver weight

Species : Rat
LOAEL : 400 mg/kg
Exposure time : 90 d

Method	:	OECD Test Guideline 408
Symptoms	:	Liver effects

cyclohexanone:

Species	:	Rat, male and female
NOAEL	:	143 mg/kg
Application Route	:	Oral
Exposure time	:	90 d
Dose	:	40, 143 and 407 mg/kg b.w.
Method	:	OECD Test Guideline 408

Solvent naphtha (petroleum), light arom.; Low boiling point naphtha -unspecified:

Species	:	Rat, male and female
NOAEC	:	0.8 - 0.9 mg/l
Application Route	:	Inhalation
Test atmosphere	:	vapor
Remarks	:	Based on data from similar materials

Species	:	Rat, male
NOAEL	:	600 mg/kg
Application Route	:	Oral
Remarks	:	Based on data from similar materials

Dodecylbenzenesulfonic acid, diethanolamine salt:

Species	:	Rat, male and female
NOAEL	:	100 mg/kg
LOAEL	:	200 mg/kg
Application Route	:	Oral - gavage
Exposure time	:	43 days
Method	:	OECD Test Guideline 422
Remarks	:	Based on data from similar materials

Ethoxylated oleyl amine, dodecylbenzenesulhponic salt:

Species	:	Rat, male and female
NOAEL	:	300 mg/kg bw/day
Application Route	:	Oral - feed
Exposure time	:	>75 days
Remarks	:	Based on data from similar materials

2-butoxyethanol:

Species	:	Rat, male
NOAEL	:	< 69 mg/kg bw/day
Application Route	:	Oral
Exposure time	:	90 d

Species	:	Rat, male and female
LOAEL	:	31 ppm
Application Route	:	Inhalation
Test atmosphere	:	vapor
Exposure time	:	2 years

Species	:	Rabbit, male and female

NOAEL : >150 mg/kg bw/day
Exposure time : 90 d

Aspiration toxicity

Not classified based on available information.

Product:

No aspiration toxicity classification

Components:

Clomazone:

The substance does not have properties associated with aspiration hazard potential.

Solvent naphtha (petroleum), light arom.; Low boiling point naphtha -unspecified:

May be fatal if swallowed and enters airways.

Further information

Product:

Remarks : Solvents may degrease the skin.

Components:

Clomazone:

Remarks : When fed to animals, clomazone caused decreased activity, tearing eyes, bleeding from the nose and incoordination.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Components:

propanil (ISO):

Toxicity to fish	:	LC50 (Fish): 8 - 11 mg/l Exposure time: 48 h
Toxicity to daphnia and other aquatic invertebrates	:	LC50 (Daphnia magna (Water flea)): 4.8 mg/l Exposure time: 48 h
Toxicity to algae/aquatic plants	:	EC50 (Scenedesmus capricornutum (fresh water algae)): 0.11 mg/l Exposure time: 72 h
M-Factor (Acute aquatic toxicity)	:	1
M-Factor (Chronic aquatic toxicity)	:	1

Toxicity to soil dwelling organisms	:	LC50 (Eisenia fetida (earthworms)): 734 milligram per kilogram Exposure time: 14 d
Toxicity to terrestrial organisms	:	(Colinus virginianus (Bobwhite quail)): 196 mg/kg (Anas platyrhynchos (Mallard duck)): 375 mg/kg (Birds): 2,861 - 5,627 ppm (Apis mellifera (bees)): 240 µg/bee

Clomazone:

Toxicity to fish	:	LC50 (Menidia beryllina (Silverside)): 6.3 mg/l Exposure time: 96 h LC50 (Oncorhynchus mykiss (rainbow trout)): > 45 mg/l Exposure time: 96 h LC50 (Lepomis macrochirus (Bluegill sunfish)): 34 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 40.8 mg/l Exposure time: 48 h EC50 (Daphnia): 5.2 mg/l Exposure time: 48 h EC50 (Daphnia magna (Water flea)): 12.7 mg/l Exposure time: 48 h Test Type: static test EC50 (Mysidopsis bahia (opossum shrimp)): 9.8 mg/l Exposure time: 48 h LC50 (Americamysis bahia (mysid shrimp)): 0.57 mg/l Exposure time: 96 h Test Type: flow-through test
Toxicity to algae/aquatic plants	:	EbC50 (Selenastrum capricornutum (green algae)): 2 mg/l Exposure time: 72 h ErC50 (Selenastrum capricornutum (green algae)): 4.1 mg/l Exposure time: 72 h ErC50 (Navicula pelliculosa (Freshwater diatom)): 0.136 mg/l Exposure time: 120 h EC50 (Lemna gibba (duckweed)): 13.9 mg/l Exposure time: 7 d NOEC (Navicula pelliculosa (Freshwater diatom)): 0.05 mg/l End point: Growth rate Exposure time: 120 h

NOEC (algae): 0.05 mg/l
Exposure time: 96 h

EC50 (Lemna gibba (duckweed)): 13.9 mg/l
Exposure time: 7 d

EC50 (algae): 0.136 mg/l
Exposure time: 72 h

Toxicity to fish (Chronic toxicity) : NOEC (Oncorhynchus mykiss (rainbow trout)): 2.3 mg/l
Exposure time: 21 d
Test Type: flow-through test

NOEC (Oncorhynchus mykiss (rainbow trout)): 2.29 mg/l
Exposure time: 57 d

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 2.2 mg/l
Exposure time: 21 d

NOEC (Americamysis bahia (mysid shrimp)): 0.032 mg/l
Exposure time: 28 d
Test Type: flow-through test

NOEC (Daphnia magna (Water flea)): 1.25 mg/l
Exposure time: 21 d
Test Type: static test

Toxicity to soil dwelling organisms : LC50 (Eisenia fetida (earthworms)): 156 mg/kg
Exposure time: 14 d

Toxicity to terrestrial organisms : LD50 (Anas platyrhynchos (Mallard duck)): > 2,510 mg/kg

LC50 (Anas platyrhynchos (Mallard duck)): > 5620 ppm
Remarks: Dietary

LD50 (Coturnix japonica (Japanese quail)): > 2000

NOEC (Colinius virginianus): 94 mg/kg
End point: Reproduction Test

LC50 (Apis mellifera (bees)): > 85.29

LC50 (Apis mellifera (bees)): > 100
Remarks: Contact

cyclohexanone:

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 527 - 732 mg/l
Exposure time: 96 h
Test Type: flow-through test

Toxicity to daphnia and other : EC50 (Daphnia magna (Water flea)): > 100 mg/l

aquatic invertebrates

Exposure time: 48 h
Method: OECD Test Guideline 202
Remarks: Based on data from similar materials

Toxicity to algae/aquatic plants : EC50 (Desmodesmus subspicatus (green algae)): > 100 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201
Remarks: Based on data from similar materials

NOEC (Desmodesmus subspicatus (green algae)): > 100 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201
Remarks: Based on data from similar materials

Toxicity to microorganisms : EC50 (activated sludge): > 1,000 mg/l
Exposure time: 30 min
Method: OECD Test Guideline 209

Solvent naphtha (petroleum), light arom.; Low boiling point naphtha -unspecified:

Toxicity to fish : NOEC (Oncorhynchus mykiss (rainbow trout)): 4.5 mg/l
Exposure time: 96 h
Test Type: semi-static test
Method: OECD Test Guideline 203
Remarks: Based on data from similar materials

LL50 (Pimephales promelas (fathead minnow)): 8.2 mg/l
Exposure time: 96 h
Test Type: semi-static test
Remarks: Based on data from similar materials

Toxicity to daphnia and other aquatic invertebrates : EL50 (Daphnia magna (Water flea)): 4.5 mg/l
Exposure time: 48 h
Test Type: static test
Method: OECD Test Guideline 202
Remarks: Based on data from similar materials

Toxicity to algae/aquatic plants : EL50 (Pseudokirchneriella subcapitata (microalgae)): 3.1 mg/l
Exposure time: 72 h
Test Type: static test
Method: OECD Test Guideline 201
Remarks: Based on data from similar materials

Toxicity to fish (Chronic toxicity) : NOELR (Pimephales promelas (fathead minnow)): 2.6 mg/l
Exposure time: 14 d
Method: OECD Test Guideline 204
Remarks: Based on data from similar materials

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOELR (Daphnia magna (Water flea)): 2.6 mg/l
Exposure time: 21 d
Method: OECD Test Guideline 211

Toxicity to microorganisms : EC50 (Tetrahymena pyriformis): 15.41 mg/l
Exposure time: 40 h
Test Type: Growth inhibition
Remarks: The value is given based on a SAR/AAR approach

using OECD Toolbox, DEREK, VEGA QSAR models (CAESAR models), etc.

Ecotoxicology Assessment

Acute aquatic toxicity : Toxic to aquatic life.

Chronic aquatic toxicity : Toxic to aquatic life with long lasting effects.

Dodecylbenzenesulfonic acid, diethanolamine salt:

Toxicity to fish : LC50 (Lepomis macrochirus (Bluegill sunfish)): 190 mg/l
Exposure time: 96 h
Remarks: Based on data from similar materials

Ethoxylated oleyl amine, dodecylbenzenesulhponic salt:

Toxicity to fish : LC50 (Lepomis macrochirus (Bluegill sunfish)): 1.67 mg/l
Exposure time: 96 h
Test Type: static test
Remarks: Based on data from similar materials

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 2.9 mg/l
Exposure time: 48 h
Test Type: static test
Method: OECD Test Guideline 202
Remarks: Based on data from similar materials

Toxicity to algae/aquatic plants : EC50 (Desmodesmus subspicatus (green algae)): 16.8 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201
Remarks: Based on data from similar materials

NOEC (Desmodesmus subspicatus (green algae)): 5.7 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 201

Toxicity to fish (Chronic toxicity) : NOEC (Oncorhynchus mykiss (rainbow trout)): 0.23 mg/l
Exposure time: 196 d
Remarks: Based on data from similar materials

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 2.9 mg/l
Exposure time: 32 d
Method: OECD Test Guideline 211
Remarks: Based on data from similar materials

Toxicity to soil dwelling organisms : LC50 (Eisenia fetida (earthworms)): > 1,000 mg/kg
Exposure time: 14 d

NOEC (Eisenia fetida (earthworms)): 250 mg/kg
Exposure time: 14 d

2-butoxyethanol:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 1,474 mg/l
Exposure time: 96 h

Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 1,550 mg/l
Exposure time: 48 h
Method: OECD Test Guideline 202

Toxicity to algae/aquatic plants : EC50 (Pseudokirchneriella subcapitata (green algae)): 623 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201

NOEC (Pseudokirchneriella subcapitata (green algae)): 62.5 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201

Toxicity to fish (Chronic toxicity) : NOEC (Danio rerio (zebra fish)): > 100 mg/l
Exposure time: 21 d
Method: OECD Test Guideline 204

NOEC (Oryzias latipes (Orange-red killifish)): > 100 mg/l
Exposure time: 14 d
Method: OECD Test Guideline 204

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 100 mg/l
Exposure time: 21 d
Method: OECD Test Guideline 211

Toxicity to microorganisms : (Pseudomonas putida): 700 mg/l
Exposure time: 16 h

(Protozoa): 73 mg/l
Exposure time: 72 h

(Protozoa): 463 mg/l
Exposure time: 48 h
Test Type: Cell multiplication inhibition test

Persistence and degradability

Components:

Clomazone:

Biodegradability : Result: Not readily biodegradable.
Remarks: Substance/product is moderately persistent in the environment.
Primary degradation half-lives vary with circumstances, from a few weeks to a few months in aerobic soil and water.

cyclohexanone:

Biodegradability : Result: Readily biodegradable.
Method: OECD Test Guideline 301F

Solvent naphtha (petroleum), light arom.; Low boiling point naphtha -unspecified:

Biodegradability : Concentration: 49.2 mg/l
Result: Inherently biodegradable.
Biodegradation: 77.05 %
Exposure time: 28 d
Method: OECD Test Guideline 301F

Dodecylbenzenesulfonic acid, diethanolamine salt:

Biodegradability : Result: Readily biodegradable.
Remarks: Based on data from similar materials

Ethoxylated oleyl amine, dodecylbenzenesulhponic salt:

Biodegradability : Result: Readily biodegradable.
Biodegradation: 85 %
Exposure time: 29 d
Method: OECD Test Guideline 301B

2-butoxyethanol:

Biodegradability : Inoculum: activated sludge
Result: Readily biodegradable.
Biodegradation: 90.4 %
Exposure time: 28 d
Method: OECD Test Guideline 301B

Bioaccumulative potential

Components:

Clomazone:

Bioaccumulation : Bioconcentration factor (BCF): 27 - 40
Remarks: Low potential for bioaccumulation

Partition coefficient: n-octanol/water : log Pow: 2.61 - 2.69 (20 - 21 °C)
pH: 4 - 10
Method: Regulation (EC) No. 440/2008, Annex, A.8

cyclohexanone:

Partition coefficient: n-octanol/water : log Pow: 0.86 (25 °C)

Dodecylbenzenesulfonic acid, diethanolamine salt:

Partition coefficient: n-octanol/water : log Pow: 4.28

Ethoxylated oleyl amine, dodecylbenzenesulhponic salt:

Bioaccumulation : Bioconcentration factor (BCF): 2 - 1,000
Method: OECD Test Guideline 305E

Partition coefficient: n-octanol/water : log Pow: 1.51

2-butoxyethanol:

Partition coefficient: n-octanol/water	:	log Pow: 0.81 (25 °C) pH: 7

Mobility in soil

Components:

Clomazone:

Distribution among environmental compartments	:	Koc: 300 ml/g, log Koc: 2.47 Remarks: Moderately mobile in soils

Other adverse effects

Product:

Additional ecological information	:	An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Very toxic to aquatic life with long lasting effects.

13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues	:	The product should not be allowed to enter drains, water courses or the soil. Do not contaminate ponds, waterways or ditches with chemical or used container. Send to a licensed waste management company.
Contaminated packaging	:	Empty remaining contents. Dispose of as unused product. Do not re-use empty containers. Do not burn, or use a cutting torch on, the empty drum.

14. TRANSPORT INFORMATION

International Regulations

UNRTDG

UN number	:	UN 1993
Proper shipping name	:	FLAMMABLE LIQUID, N.O.S. (Cyclohexanone, Clomazone, Propanil)
Class	:	3
Packing group	:	III
Labels	:	3
Environmentally hazardous	:	no

IATA-DGR

UN/ID No.	:	UN 1993
Proper shipping name	:	Flammable liquid, n.o.s. (Cyclohexanone, Clomazone, Propanil)

Class	:	3
Packing group	:	III
Labels	:	Flammable Liquids
Packing instruction (cargo aircraft)	:	366
Packing instruction (passenger aircraft)	:	355

IMDG-Code

UN number	:	UN 1993
Proper shipping name	:	FLAMMABLE LIQUID, N.O.S. (Cyclohexanone, Clomazone, Propanil)
Class	:	3
Packing group	:	III
Labels	:	3
EmS Code	:	F-E, S-E
Marine pollutant	:	yes

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

Not applicable for product as supplied.

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.

15. REGULATORY INFORMATION

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

Priority Chemical List (PCL)	:	Not applicable
Chemical Control Order (CCO)	:	Not applicable

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

TCSI	:	Not in compliance with the inventory
TSCA	:	Product contains substance(s) not listed on TSCA inventory.
AIIC	:	Not in compliance with the inventory
DSL	:	This product contains the following components that are not on the Canadian DSL nor NDSL. 2,(2-chlorobenzyl)-4,4-dimethyl-1,2-oxazoldin-3-on Ethoxylated oleyl amine, dodecylbenzenesulhponic salt propanil (ISO)
ENCS	:	Not in compliance with the inventory
ISHL	:	Not in compliance with the inventory

KECI	:	Not in compliance with the inventory
PICCS	:	Not in compliance with the inventory
IECSC	:	Not in compliance with the inventory
NZIoC	:	Not in compliance with the inventory
TECI	:	Not in compliance with the inventory

16. OTHER INFORMATION

Revision Date	:	2024/05/10
Date format	:	yyyy/mm/dd

Full text of other abbreviations

ACGIH	:	USA. ACGIH Threshold Limit Values (TLV)
ACGIH BEI	:	ACGIH - Biological Exposure Indices (BEI)
PH OEL	:	Philippines. Threshold Limit Values For Airborne Contaminants
ACGIH / TWA	:	8-hour, time-weighted average
ACGIH / STEL	:	Short-term exposure limit
PH OEL / TWA	:	Threshold limit for airborne contaminants

AIIC - Australian Inventory of Industrial Chemicals; ANTT - National Agency for Transport by Land of Brazil; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; 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; 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; n.o.s. - Not Otherwise Specified; Nch - Chilean Norm; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NOM - Official Mexican Norm; 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; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TDG - Transportation of Dangerous Goods; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recom-

mendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative; WHMIS - Workplace Hazardous Materials Information System

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