

SAFETY DATA SHEET

ENFORCER FORMULA 777 E.C. WEED KILLER_55GL

Version 2.1

Revision Date 10/01/2023

Print Date 04/25/2025

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Material name : ENFORCER FORMULA 777 E.C. WEED KILLER_55GL

Material number : 000000000000136486

Manufacturer or supplier's details

Company : Zep Commercial Sales & Service, a unit of Zep, Inc.

Address : 350 Joe Frank Harris Parkway, SE
Emerson, GA 30137

Telephone : Compliance Services - 877-428-9937

Emergency telephone numbers

For SDS Information : Compliance Services - 877-428-9937

For a Medical Emergency : 877-541-2016 Toll Free - All Calls Recorded

For a Transportation
Emergency : CHEMTREC: 800-424-9300 - All Calls Recorded.
In the District of Columbia 202-483-7616

Recommended use of the chemical and restrictions on use

SECTION 2. HAZARDS IDENTIFICATION

Emergency Overview

Appearance	liquid
Colour	brown
Odour	solvent-like

GHS Classification

Carcinogenicity : Category 2

Reproductive toxicity : Category 1B

GHS label elements

Hazard pictograms :



Health hazard

Signal word : Danger

Hazard statements : H351 Suspected of causing cancer.
H360 May damage fertility or the unborn child.

Precautionary statements : **Prevention:**
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
Response:

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P308 + P313 IF exposed or concerned: Get medical advice/attention.

Disposal:

P501 Dispose of contents/container in accordance with local regulation.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Hazardous components

Chemical name	CAS-No.	Concentration [%]
1-methyl-2-pyrrolidone	872-50-4	$\geq 1 - < 5$
bromacil	314-40-9	$\geq 1 - < 5$
naphthalene	91-20-3	$\geq 0.1 - < 1$

The exact percentages of disclosed substances are withheld as trade secrets.

SECTION 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.
Move to fresh air.
- In case of skin contact : In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
Wash clothing before reuse.
Thoroughly clean shoes before reuse.
Get medical attention if irritation develops and persists.
- In case of eye contact : Remove contact lenses.
Protect unharmed eye.
Keep eye wide open while rinsing.
If eye irritation persists, consult a specialist.
Immediately flush eyes for at least 15 minutes. Get medical attention.
- If swallowed : Clean mouth with water and drink afterwards plenty of water.
Induce vomiting immediately and call a physician.
Keep respiratory tract clear.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.
Take victim immediately to hospital.
DO NOT induce vomiting unless directed to do so by a physician or poison control center.

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Most important symptoms and effects, both acute and delayed	: Effects are immediate and delayed. Chronic effects are delayed and symptoms may not be observed during an exposure. Effects are dependent on exposure (dose, concentration, contact time). Suspected of causing cancer. May damage fertility or the unborn child. Review section 2 of SDS to see all potential hazards.
Notes to physician	: Treat symptomatically.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media	: Dry chemical Alcohol-resistant foam Carbon dioxide (CO ₂) Water spray
Unsuitable extinguishing media	: High volume water jet
Specific hazards during firefighting	: Do not allow run-off from fire fighting to enter drains or water courses.
Hazardous combustion products	: Carbon dioxide (CO ₂) Carbon monoxide Smoke Nitrogen oxides (NO _x) Bromine compounds
Specific extinguishing methods	: Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Further information	: 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.
Special protective equipment for firefighters	: Wear self-contained breathing apparatus for firefighting if necessary.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	: Use personal protective equipment.
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	: Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).

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Keep in suitable, closed containers for disposal.

SECTION 7. HANDLING AND STORAGE

- Advice on safe handling : Do not breathe vapours/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.
Dispose of rinse water in accordance with local and national regulations.
- Conditions for safe storage : 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.
- Materials to avoid : Store and keep away from, oxidizing agents and acids.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
1-methyl-2-pyrrolidone	872-50-4	TWA	10 ppm	US WEEL
		PEL	1 ppm 4 mg/m3	CAL PEL
bromacil	314-40-9	TWA	10 mg/m3	ACGIH
		TWA	1 ppm 10 mg/m3	NIOSH REL
		TWA	1 ppm 10 mg/m3	OSHA P0
		PEL	1 ppm 10 mg/m3	CAL PEL
naphthalene	91-20-3	TWA	10 ppm	ACGIH
		STEL	15 ppm	ACGIH
		TWA	10 ppm 50 mg/m3	NIOSH REL
		ST	15 ppm 75 mg/m3	NIOSH REL
		TWA	10 ppm 50 mg/m3	OSHA Z-1
		TWA	10 ppm 50 mg/m3	OSHA P0
		STEL	15 ppm 75 mg/m3	OSHA P0

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		PEL	0.1 ppm 0.5 mg/m3	CAL PEL
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Biological occupational exposure limits

Component	CAS-No.	Control parameters	Biological specimen	Sampling time	Permissible concentration	Basis
N-METHYL-2-PYRROLIDINONE	872-50-4	5-Hydroxy-N-methyl-2-pyrrolidone	Urine	End of shift (As soon as possible after exposure ceases)	100 mg/l	ACGIH BEI

Engineering measures : effective ventilation in all processing areas

Personal protective equipment

Respiratory protection : In case of insufficient ventilation, wear suitable respiratory equipment.

Hand protection

Material

: Protective gloves

Remarks

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

Eye protection

: Safety goggles

Ensure that eyewash stations and safety showers are close to the workstation location.

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.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

: liquid

Colour

: brown

Odour

: solvent-like

Odour Threshold

: No data available

pH

: Not applicable

Melting point/freezing point

: Not applicable

Boiling point

: > 315.5 °C

Flash point

: > 93.3 °C

Method: closed cup

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Evaporation rate	: No data available
Upper explosion limit	: No data available
Lower explosion limit	: No data available
Vapour pressure	: No data available
Relative vapour density	: No data available
Density	: 0.896 g/cm3
Solubility(ies)	
Water solubility	: emulsifiable
Solubility in other solvents	: not determined
Partition coefficient: n-octanol/water	: No data available
Auto-ignition temperature	: not determined
Thermal decomposition	: No data available
Viscosity	
Viscosity, kinematic	: 10.5 mm2/s (20 °C)

SECTION 10. STABILITY AND REACTIVITY

Reactivity	: Stable
Chemical stability	: Stable under normal conditions.
Possibility of hazardous reactions	: Stable under recommended storage conditions. No decomposition if stored and applied as directed.
Conditions to avoid	: Heat, flames and sparks.
Incompatible materials	: Acids Oxidizing agents
Hazardous decomposition products	: Carbon oxides Bromine Nitrogen oxides (NOx)

SECTION 11. TOXICOLOGICAL INFORMATION

Potential Health Effects

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Aggravated Medical Condition : None known.

Symptoms of Overexposure : Effects are immediate and delayed.
Chronic effects are delayed and symptoms may not be observed during an exposure.
Effects are dependent on exposure (dose, concentration, contact time).
Suspected of causing cancer.
May damage fertility or the unborn child.
Review section 2 of SDS to see all potential hazards.
Treat symptomatically.

Carcinogenicity:

IARC	Group 2B: Possibly carcinogenic to humans naphthalene	91-20-3
ACGIH	Confirmed animal carcinogen with unknown relevance to humans bromacil	314-40-9
	naphthalene	91-20-3
OSHA	No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.	
NTP	Reasonably anticipated to be a human carcinogen naphthalene	91-20-3

Acute toxicity

Product:

Acute oral toxicity : Acute toxicity estimate : > 5,000 mg/kg
Method: Calculation method

Components:

1-methyl-2-pyrrolidone:

Acute oral toxicity : LD50 Oral Rat: 3,914 mg/kg

Acute dermal toxicity : LD50 Dermal Rabbit: 8,000 mg/kg

Skin corrosion/irritation

Product:

Remarks: May cause skin irritation and/or dermatitis.

Serious eye damage/eye irritation

Product:

Remarks: Vapours may cause irritation to the eyes, respiratory system and the skin.

Respiratory or skin sensitisation

No data available

Germ cell mutagenicity

No data available

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Carcinogenicity

No data available

Reproductive toxicity

No data available

STOT - single exposure

No data available

STOT - repeated exposure

No data available

Aspiration toxicity

No data available

Further information

Product:

Remarks: No data available

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

No data available

Persistence and degradability

No data available

Bioaccumulative potential

Product:

Partition coefficient: n-octanol/water : Remarks: No data available

Components:

1-methyl-2-pyrrolidone :

Partition coefficient: n-octanol/water : log Pow: -0.46

Mobility in soil

No data available

Other adverse effects

No data available

Product:

Regulation

40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances

Remarks

This product neither contains, nor was manufactured

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with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

Additional ecological information

: No data available

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal., Harmful to aquatic life.

SECTION 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.
Dispose of in accordance with local regulations.

Contaminated packaging

: Empty remaining contents.
Dispose of as unused product.
Do not re-use empty containers.

SECTION 14. TRANSPORT INFORMATION

Transportation Regulation: 49 CFR (USA):
NOT REGULATED AS DANGEROUS GOODS OR HAZARDOUS MATERIAL

Transportation Regulation: IMDG (Vessel):
UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S., (N-METHYL-2-PYRROLIDINONE, BROMACIL), 9, III

Transportation Regulation: IATA (Cargo Air):
UN3082, Environmentally hazardous substance, liquid, n.o.s., (N-METHYL-2-PYRROLIDINONE, BROMACIL), 9, III

Transportation Regulation: IATA (Passenger Air):
UN3082, Environmentally hazardous substance, liquid, n.o.s., (N-METHYL-2-PYRROLIDINONE, BROMACIL), 9, III

Transportation Regulation: TDG (Canada):
NOT REGULATED AS DANGEROUS GOODS OR HAZARDOUS MATERIAL

The product as delivered to the customer conforms to packaging requirements for shipment by road under US Department of Transportation (DOT) regulations. Additional transportation classifications noted above are for reference only, and not a certification or warranty of the suitability of the packaging for shipment under these alternative transport regulations.

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SECTION 15. REGULATORY INFORMATION

This product is regulated under the United States Federal Insecticide, Fungicide and Rodenticide Act (FIFRA).

Pesticide Labeling Information Required Under U.S. FIFRA Regulations

This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

WARNING

Causes substantial but temporary eye injury.

Harmful if swallowed.

Harmful if absorbed through skin.

Observe label precautions.

TSCA list : No substances are subject to a Significant New Use Rule.

The following substance(s) is/are subject to TSCA 12(b) export notification requirements:

naphthalene 91-20-3

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
naphthalene	91-20-3	100	*

*: Calculated RQ exceeds reasonably attainable upper limit.

SARA 304 Extremely Hazardous Substances Reportable Quantity

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

SARA 311/312 Hazards : Carcinogenicity
Reproductive toxicity

SARA 302 : No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 : The following components are subject to reporting levels established by SARA Title III, Section 313:

1-methyl-2-pyrrolidone	872-50-4	1.9999 %
bromacil	314-40-9	1.6427 %
naphthalene	91-20-3	0.12 %

California Prop. 65

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WARNING: This product can expose you to chemicals including naphthalene, ethylbenzene, which is/are known to the State of California to cause cancer, and 1-methyl-2-pyrrolidone, which is/are known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

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

DSL	All components of this product are on the Canadian DSL
TSCA	On TSCA Inventory

For information on the country notification status for other regions please contact the manufacturer's regulatory group.

Inventory Acronym and Validity Area Legend:

TSCA (USA), DSL (Canada), NDSL (Canada)

SECTION 16. OTHER INFORMATION

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Further information

NFPA:

HEALTH	2
FLAMMABILITY	1
INSTABILITY	0
SPECIAL HAZARD.	

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

HMIS III:

HEALTH	2*
FLAMMABILITY	1
PHYSICAL HAZARD	0

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

OSHA - GHS Label Information:

Hazard pictograms



Health hazard

Signal word

: **Danger:**

Hazard statements

: Suspected of causing cancer. May damage fertility or the unborn child.

Precautionary statements

: **Prevention:** Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves/ protective clothing/ eye protection/ face protection.
Response: IF exposed or concerned: Get medical advice/ attention.

Disposal: Dispose of contents/container in accordance with local regulation.

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