European Commission

Draft (Renewal) Assessment Report prepared according to the Commission Regulation (EU) N° 1107/2009

Fenoxaprop-P-ethyl

Volume 3 – B.4 (PPP) – Puma S 69 EW

Rapporteur Member State: Austria
Co-Rapporteur Member State: Finland

Version History

When	What
2005/April	Initial DAR of the active substance.
2018/March	DRAR

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B.4. FURTHER INFORMATION

B.4.1. SAFETY INTERVALS AND OTHER PRECAUTIONS TO PROTECT HUMANS, ANIMALS AND THE ENVIRONMENT

Pre-harvest interval (in days) for each relevant crop:
The pre-harvest interval is determined by the interval between application and harvest.

Re-entry period (in days) for livestock, to areas to be grazed:
Fenoxaprop-P-ethyl + Mefenpyr-diethyl EW 144 (69+75 g/L) is not intended for use in areas where livestock may be grazed.

Re-entry period (in hours or days) for man to crops, buildings or spaces treated:
Fenoxaprop-P-ethyl + Mefenpyr-diethyl EW 144 (69+75 g/L) not intended for use on crops which require re-entry. No re-entry period is required for humans. The product is not intended for treatment of buildings or spaces.

Withholding period (in days) for animal feeding stuffs:
No withholding period is required for animal feeding stuffs.

Waiting period (in days) between application and handling of treated products:
The waiting period between application and handling treated products is determined by normal agricultural practice.

Waiting period (in days) between last application and sowing or planting succeeding crops:
The waiting period between last application and sowing or planting of succeeding crops is determined by normal agricultural practice.

Information on specific conditions under which the preparation may or may not be used:
Fenoxaprop-P-ethyl + Mefenpyr-diethyl EW 144 (69+75 g/L) should not be applied to crops under stress due to drought or water-logging. No special conditions were identified under which the product cannot be applied during more than 20 years of registered use.

B.4.2. RECOMMENDED METHODS AND PRECAUTIONS

Handling and storage

Advice on safe handling	Use only in area provided with appropriate exhaust ventilation.
Advice on protection against fire and explosion	Dust may form explosive mixture in air. Keep away from heat and sources of ignition.
Hygiene measures	Avoid contact with skin, eyes and clothing. Keep working clothes separately. Wash hands immediately after work, if necessary take a shower. Remove soiled clothing immediately and clean thoroughly before using again. Garments that cannot be cleaned must be destroyed (burnt).
Requirements for storage areas and containers	Store in original container. Keep containers tightly closed in a dry, cool and well-ventilated place. Store in a place accessible by authorized persons only. Keep away from direct sunlight. Protect from frost.
Advice on common storage	Keep away from food, drink and animal feedingstuffs

Transport

Proper shipping name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.(FENOXAPROP-P-ETHYL, SOLVENT NAPHTHA (PETROLEUM) HEAVY AROMATIC SOLUTION)

ADR/RID/AND:	UN number	3082
	Transport hazard class(es)	9
	Packing group	III
	Environm. Hazardous Mark	YES
	Hazard no.	90
	Tunnel Code	E

This classification is in principle not valid for carriage by tank vessel on inland waterways. Please refer to the manufacturer for further information.

IMDG	UN number	3082
	Transport hazard class(es)	9
	Packing group	III
	Marine pollutant	YES
IATA	UN number	3082
	Transport hazard class(es)	9
	Packing group	III
	Environm. Hazardous Mark	YES

No transport in bulk according to the IBC Code.

Fire

Suitable extinguishing media	Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
Unsuitable extinguishing media	High volume water jet
Special hazards arising from the substance or mixture	In the event of fire the following may be released: Hydrogen chloride (HCl), Hydrogen cyanide (hydrocyanic acid), Carbon monoxide (CO), Nitrogen oxides (NOx). Please refer to the information provided on combustion products
Special protective equipment for firefighters	In the event of fire and/or explosion do not breathe fumes. In the event of fire, wear self-contained breathing apparatus.
Further information	Contain the spread of the fire-fighting media. Do not allow run-off from fire fighting to enter drains or water courses.

Information on combustion products

Reference:	**Information on combustion products Fenoxaprop-P-ethyl liquid formulations, e.g. Furore / Whip EW Puma EC, Puma EW Ricestar EC Code: AE F046360 00 EWxxx / AE F046360 24 ECxxx / AE F046360 24 EWxxx / AE F046360 42 ECxxx**
Author(s), year:	Kuebel, B.; 1998
Report/Doc. number:	C002004 / M-183760-01-1
Guideline(s):	--
GLP:	no

From the molecular formulas of Fenoxaprop-P-ethyl (C18H16ClNO5) and the other components of the formulation Puma S 69EW it is concluded that the combustion gases will be CO_2, NO_x, HCl, H_2O and - in case of oxygen deficiency - also CO and HCN.
Due to a halogen content in the active substance far below 60% (Fenoxaprop-P-ethyl: 9,8 % chlorine) combustion in a waste incineration plant does not raise concern of the formation of halogenated dioxins/furans.

Protective clothing and equipment proposed

Respiratory protection
Respiratory protection is not required under anticipated circumstances of exposure. Respiratory protection should only be used to control residual risk of short duration activities, when all reasonably practicable steps have been taken to reduce exposure at source e.g. containment and/or local extract ventilation. Always follow respirator manufacturer's instructions regarding wearing and maintenance.

Hand protection
Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time.
Wash gloves when contaminated. Dispose of when contaminated inside, when perforated or when contamination on the outside cannot be removed. Wash hands frequently and always before eating, drinking, smoking or using the toilet.

Material:	Nitrile rubber
Rate of permeability:	> 480 min
Glove thickness:	> 0.4 mm
Protective index:	Class 6
Directive:	Protective gloves complying with EN 374.

Eye protection
Wear goggles (conforming to EN166, Field of Use = 5 or equivalent).

Skin and body protection
Wear standard coveralls and Category 3 Type 4 suit.
If there is a risk of significant exposure, consider a higher protective type suit. Wear two layers of clothing wherever possible. Polyester/cotton or cotton overalls should be worn under chemical protection suit and should be professionally laundered frequently. If chemical protection suit is splashed, sprayed or significantly contaminated, decontaminate as far as possible, then carefully remove and dispose of as advised by manufacturer.

General protective measures
If product is handled while not enclosed, and if contact may occur: Complete suit protecting against chemicals

Suitability and effectiveness of protective clothing and equipment:
Safety glasses and protective suit are recommended as routine hygienic measures. Chemical resistant gloves (nitrile rubber) are well known to sufficiently protect hands from contact with the product handled.

Precautions to minimise hazards

Precautions	Avoid contact with spilled product or contaminated surfaces. Use personal protective equipment.
Environmental precautions	Do not allow to get into surface water, drains and ground water.
Methods for cleaning up	Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Clean contaminated floors and objects thoroughly, observing environmental regulations. Keep in suitable, closed containers for disposal.

Procedure to minimise waste

Reference:	**Procedure to minimize the generation of waste and left overs Fenoxaprop-P-ethyl liquid formulations, e.g. Furore / Whip EW Puma EW, Puma EC Ricestar EC Code: AE F046360 00 EWxxx / AE F046360 24 ECxxx / AE F046360 24 EWxxx / AE F046360 42 EC**
Author(s), year:	Kuebel, B.; 1998
Report/Doc. number:	C002006 / M-183764-01-1
Guideline(s):	
GLP:	no

To minimize waste of the product, users are required to rinse packages after emptying and to add the rinsate to the spraying liquid. To minimize waste of packages, it is recommended that empty and rinsed containers are delivered to a local container collection program, if existing. If this is not existing, empty and rinsed containers have to be delivered to the communal waste collection.
To minimize generation of left overs, users are recommended to buy not more than is consumed within the shelf life period of the product and to store the product before use according to storage recommendation (cool and dry).

Washing and cleaning of machinery and protective equipment

Reference:	**Guidelines for decontamination and disposal of empty containers Fenoxaprop-P-ethyl oil in water emulsion 69 g/L Code: Hoe 046360 24 EW14 A700**
Author(s), year:	Kuebel, B.; Rexer, K.; 1995
Report/Doc. number:	A55349 / M-139302-01-1
Guideline(s):	--
GLP:	no

General statement
All application equipment and contaminated protective clothing should be washed/cleaned with water or a dilute detergent solution and thoroughly rinsed. Care should be taken not to spill the contaminated washings from application into waste water channels. Contaminated cleaning liquids should be disposed of safely according to local regulations.

Application equipment:
Product left over in field spraying equipment which has not been sufficiently cleaned may cause damage during sequential treatment of sensitive crops. As a consequence, cleaning out of field spraying equipment is an essential part of the recommendations for use of plant protection product.

Procedure:

A cleaning step has to be done immediately after spraying Puma®. Empty the spraying equipment completely on the field just sprayed. Remove all filters and nozzles, scrub clean and rinse them with clean water. Put 10 % of the capacity of clean water into tank. Operate a tank flushing system if fitted. Circulate water through the pump and controls for at least one minute. Drain sprayer, collect washings. Repeat procedure once more. Pump last washing water out through boom feed hoses and pipes. Collect washings. Clean off the outside of the sprayer using minimum water volumes. Collect washings. Replace cleaned nozzles and filters. Collect and put all washings back into the tank and spray out on the field's headland, or otherwise safely dispose of them. Ensure the sprayer systems are completely drained before storage. Store plant protection equipment in a properly designated area.

Protective clothing:
All contaminated closing should be washed/ cleaned with a dilute detergent solution and thoroughly rinsed with clean water. Impermeable overalls, boots and face shields should be washed clean and dried. Permeable overalls should be laundered after use. Disposable overalls and gloves should be washed and disposed of as contaminated waste. Gloves and boots should be washed clean, if necessary on the insides as well.

Effectiveness of cleaning procedures

Reference:	**Results to characterise spray tank cleaning behaviour - tank wash recommendations Puma S 69EW Code: AE F046360 24 EW14 A7**
Author(s), year:	Friessleben, R.; 2003
Report/Doc. number:	C031901 / M-230458-01-1
Guideline(s):	--
GLP:	no

A study with field sprayers was conducted to test the tank wash behaviour of the test substance AE F046360 24 EW14 A7 (Puma S 69EW) at a dose rate of 1 L/ha in a total amount of 80 L/ha water. The test substance was applied with field sprayer in order to empty it, after which the inside of the sprayer was cleaned in specified working steps. A new application is then simulated with tap water. The active substance content of the water sprayed was analysed. The active substance content in the water sprayed after two rinsing steps with 10 % of the tank capacity is 0.28 mg/L fenoxaprop-P-ethyl equivalent to less than 0.1 % of the target concentration. This dosage could not cause damages in sensitive non target crops.
Therefore a water rinse of the spraying equipment with twice 10 % of the volume of the tank is expected to be sufficient.

B.4.3. EMERGENCY MEASURES IN CASE OF AN ACCIDENT

Reference:	**Containment of spillages and decontamination of contaminated areas Fenoxaprop-P-ethyl liquid formulations, e.g. Furore/Whip EW Puma EW, Puma EC Ricestar EC Code: AE F046360 00 EWxxx / AE F046360 24 ECxxx / AE F046360 24 EWxxx / AE F046360 4**
Author(s), year:	Kuebel, B.; 1998
Report/Doc. number:	C002002 / M-183756-01-1
Guideline(s):	--
GLP:	no

Containment of spillages:

Impervious soils (e.g. concrete)	Bind spillage with absorbents (preferably chemical binder, otherwise saw dust, clay or sand).
Adsorbing soils	Dig out as far as contaminated (wetted, smelling).
Water	If a spillage occurs into water, the contaminated water must be contained by e.g. dykes, absorbents or pumping off depending from local situation. If containment is impossible (rivers or lakes)

the usage of contaminated water for drinking and for irrigation must be prevented.

Decontamination
Absorbed spillage or contaminated soil has to be collected, for small quantities best by an industrial vacuum cleaner, alternatively with broom and shovel. Solid surfaces may be further cleaned by washing with detergents. Pack absorbed material into tightly closable, disposable containers.
Water contaminated by a spillage and recovered by containment must be collected and burned in a commercial incinerator or treated in a waste water treatment plant.

Disposal of spilled material and damaged packages
Damaged packaging and collected material from spillage have to be burned in a commercial incinerator.

Protection of emergency workers
Impervious gloves and protective clothing should be worn by the emergency team when collecting spillages. No smoking or open flames.

First aid measures

General advice	Move out of dangerous area. Place and transport victim in stable position (lying sideways). Remove contaminated clothing immediately and dispose of safely.
Inhalation	Move to fresh air. Keep patient warm and at rest. Call a physician or poison control center immediately.
Skin contact	Wash off thoroughly with plenty of soap and water, if available with polyethyleneglycol 400, subsequently rinse with water. If symptoms persist, call a physician.
Eye contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Get medical attention if irritation develops and persists.
Ingestion	Do NOT induce vomiting. Call a physician or poison control center immediately. Risk of product entering the lungs on vomiting after ingestion. Rinse mouth.
Symptoms	If large amounts are ingested, the following symptoms may occur: Headache, Nausea, Dizziness, Somnolence Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea. Aspiration may cause pulmonary oedema and pneumonitis. Inhalation may provoke the following symptoms: cough,shortness of breath, cyanosis, fever Symptoms and hazards refer to the solvent.
Risks	Contains hydrocarbon solvents. May pose an aspiration pneumonia hazard.
Treatment	Treat symptomatically. Gastric lavage is not normally required. However, if a significant amount (more than a mouthful) has been ingested, administer activated charcoal and sodium sulphate. In case of aspiration intubation and bronchial lavage should be considered. Monitor: kidney, liver and pancreas

function. There is no specific antidote. Contraindication: derivatives of adrenaline.

B.4.4. PACKAGING, COMPATIBILITY OF THE PLANT PROTECTION PRODUCT WITH PROPOSED PACKAGING MATERIALS

Bottles

	250 mL	**500 mL**	**1 L**
Material I	HDPE	HDPE	HDPE
Material II	Coex HDPE/EVOH	Coex HDPE/EVOH	Coex HDPE/EVOH
Material III	Coex HDPE/PA	Coex HDPE/PA	Coex HDPE/PA
Shape / size [mm]	cylindrical / 62.5 x 137 mm	cylindrical / 69 x 193 mm	cylindrical / 88.5 x 244.5 mm
Opening	45 mm	45 mm	45 mm
Closure	Screw cap	Screw cap	Screw cap
Seal	HF seal, Foam Disc	HF seal, Foam Disc	HF seal, Foam Disc
Manner of Construction	extruded	extruded	extruded

Containers

	3 L	**5 L**	**10 L**
Material I	HDPE	HDPE	HDPE
Material II			
Material III	Coex HDPE/PA	Coex HDPE/PA	Coex HDPE/PA
Shape / size [mm]	rectangular / 190 x 140 x 236 mm	rectangular / 190 x 140 x 309 mm	rectangular / 226 x 186 x 370 mm
Opening	57.8 mm	57.8 mm	57.8 mm
Closure	Screw cap	Screw cap	Screw cap
Seal	HF seal, Foam Disc	HF seal, Foam Disc	HF seal, Foam Disc
Manner of Construction	extruded	extruded	extruded

The packaging is complaint with UN/ADR.

The determination of the stability of the packaging material was carried out by means of a visual inspection. The result was reported in conventional terms appropriate to describe the packaging material of the test item. This includes information about deformation or leakage of the packaging, effect on closure and weight change.
The stability of COEX/PA and COEX/EVOH as packaging material was found be stable and suitable for use with the formulation (refer to storage studies reported in CP B.2). It can be expected that COEX/PA and COEX/EVOH will safely withstand normal handling and practical use. Therefore both materials can be recommended as packaging material.

Furthermore, a study submitted for the Annex I Inclusion has been conducted using bottles and containers of different size made of Polyamide (PA) / adhesive / high density polyethylene (HDPE).

Reference:	**Information on packaging Fenoxaprop-P-ethyl oil in water emulsion 69 g/L Code: Hoe 046360 24 EW14 A700**
Author(s), year:	Simon-Hullmann, U.; Rexer, K.; 1995
Report/Doc. number:	A55347 / M-139300-01-1
Guideline(s):	--
GLP:	no

Resistance of packaging material to its contents has been tested in accordance with GIFAP Technical Monograph No 17 (May 1993).
The stability of primary packaging material is considered to be acceptable. No detrimental effects were noted after completion of the storage test of 24 months at ambient temperature. Appearance and weight change were acceptable, active content and suspensibility were within the specification, the packaging showed no sign of deformation and the closure seal was intact.

B.4.5. PROCEDURES FOR DESTRUCTION OR DECONTAMINATION OF THE PLANT PROTECTION PRODUCT AND ITS PACKAGING

B.4.5.1. Neutralisation procedure

Reference:	**Neutralisation and disposal of neutralisation products Fenoxaprop-P-ethyl liquid formulations, e.g. Furore / Whip EW Puma EW, Puma EC Ricestar EC Code: AE F046360 00 EWxxx / AE F046360 24 ECxxx / AE F046360 24 EWxxx / AE F046360 42 ECxxx**
Author(s), year:	Kuebel, B.; 1998
Report/Doc. number:	C002005 / M-183762-01-1
Guideline(s):	--
GLP:	no

Waste material from spillage should be disposed of in a commercial incinerator. Trace residues on surfaces can be washed off with detergents. Disposal of the resulting solution can take place by incineration in a commercial waste incinerator or by treatment in a waste water treatment plant. Small volumes from activities on the farm may be diluted and sprayed according to the label instructions.

B.4.5.2. Controlled incineration

Reference:	**Fenoxaprop-P-ethyl. Incineration as a safe means of disposal and pyrolytic behaviour under controlled conditions. Code: AE F046360**
Author(s), year:	Le Gren, I.; 2003
Report/Doc. number:	C029690 / M-217669-01-1
Guideline(s):	--
GLP:	no

Incineration of Fenoxaprop-P-ethyl is recommended as the way of safe disposal by controlled incineration at an approved chemical waste facility. Since the halogen content of fenoxaprop-P-ethyl (9.81 % w/w halogens) is higher than 1 %, the standard process are: temperature higher than 1100°C, residence time higher than 2 seconds, oxygen excess higher than 6 %.

Hydrochloric Acid exhaust gases should not exceed 10 mg/m^3 as an average on 24 hours.

Incineration must be done under controlled conditions according to the EC directive 94/67.

B.4.6. REFERENCES RELIED ON

Data Point	Author(s)	Year	Title Compagny Report No. Source (where different from company) GLP or GEP status Published or not	Vertebrate study Y/N	Data protection claimed Y/N	Justification if data protection is claimed	Owner	Previous evaluation