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SAFETY DATA SHEET

SDS No.505-22 (M11-20)

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/ UNDERTAKING

1.1. Product identifier

Product name: **OS-169EC (Synonyms: Pyraflufen-ethyl 2.5EC(EU),
ET-751 2.5EC(EU))**

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

Relevant identified uses: Defoliant, Desiccant

1.3. Details of the supplier of the safety data sheet

Manufacturer

Nihon Nohyaku Co., Ltd.

19-8, Kyobashi 1-Chome, Chuo-Ku, Tokyo 104-8386, JAPAN
(ENVIRONMENT SAFETY DEPT. / Phone: 81-3-6361-1426
Facsimile: 81-3-6361-1451
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European Contact

Nichino Europe Co., Ltd.

5 Pioneer Court, Vision Park, Histon, Cambridge CB24 9PT, UK
Phone: 44-1223-855720* Facsimile: 44-1223-233119

1.4. Emergency telephone number

OVERSEAS DIVISION, Nihon Nohyaku Co., Ltd.

19-8, Kyobashi 1-Chome, Chuo-Ku, Tokyo 104-8386, JAPAN
Phone: 81-3-6361-1425 Facsimile: 81-3-6361-1456

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Acute Tox. 4; H332*
Skin Irrit. 2; H315*
Eye Dam. 1; H318*
Skin Sens 1; H317*
Asp. Tox. 1; H304*
Aquatic Acute 1; H400*
Aquatic Chronic 1; H410*

Classification according to Directive 67/548/EEC or 1999/45/EC

Xn; R20
Xi; R38
Xi; R41
Xi; R43
N; R50/53

Additional information: See SECTION 16 for full text of R-phrases and Hazard- and EU Hazard-statements.*

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP/GHS]*

Pictogram:*



Signal Word:*

Danger*

Hazard Statement:*

H332	Harmful if inhaled.*
H315	Causes skin irritation.*
H318	Causes serious eye damage.*
H317	May cause an allergic skin reaction.*
H304	May be fatal if swallowed and enters airways.*
H400	Very toxic to aquatic life.*
H410	Very toxic to aquatic life with long lasting effects.*

Precautionary Statement (Prevention):*

P271	Use only outdoors or in a well-ventilated area.*
P280	Wear protective gloves/protective clothing/eye protection/face protection.*
P261	Avoid breathing dust/fume/gas/mist/vapours/spray.*
P264	Wash hands thoroughly after handling.*
P272	Contaminated work clothing should not be allowed out of the workplace.*
P273	Avoid release to the environment.*

Precautionary Statement (Response):*

P301+P310	IF SWALLOWED: Immediately call a POISON CENTER/doctor.*
P331	Do NOT induce vomiting.*
P304+P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.*
P302+P352	IF ON SKIN: Wash with plenty of soap and water.*
P333+P313	If skin irritation or rash occurs: Get medical advice/attention.*
P305+P351+P338 +P310	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor.*
P312	Call a POISON CENTER/doctor if you feel unwell.*
P362	Take off contaminated clothing and wash before reuse.*
P391	Collect spillage.*

Precautionary Statement (Storage):*

P405	Store locked up.*
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Precautionary Statement (Disposal):*

P501	Dispose of contents/container in accordance with local regulation.*
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Supplemental Hazard Information (EU):*

EUH401

To avoid risks to human health and the environment, comply with the instructions for use.*

Additional information: See SECTION 16 for the labelling according to Directive 67/548/EEC or 1999/45/EC*

2.3. Other hazards

No data available.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances

Not applicable. This product is regulated as a mixture.

3.2. Mixtures

Active ingredient: Ethyl 2-chloro-5-(4-chloro-5-difluoromethoxy-1-methylpyrazol-3-yl)-4-fluorophenoxyacetate
(Common name: Pyraflufen-ethyl)

Hazardous ingredients:

Chemical name	CAS No.	CLP index No.	Concentration (% w/w)	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Pyraflufen-ethyl	129630-19-9	613-203-00-X	2.5	Aquatic Acute 1; H400, Aquatic Chronic 1; H410, M factor = 1000
Hydrocarbons, C10-C13, aromatics, <1% naphthalene	-	-	>60 - <70	Asp. Tox. 1; H304, Aquatic Chronic 2; H411, EUH 066
Butyrolactone	96-48-0	-	>5 - <15	Acute Tox. 4; H302, Eye Dam. 1; H318, STOT SE 3; H336
Alcohols, C12-ethoxylated*	9002-92-0	-	>2 - <7	Skin Irrit. 2; H315, Eye Irrit. 2; H319
Xylene (mixed)	1330-20-7	601-022-00-9	>=1 - <5	Flam. Liq. 3; H226, Acute Tox. 4; H312, Acute Tox. 4; H332, Skin Irrit. 2; H315
Dimethyl succinate	106-65-0	-	>=1.5 - <=2.5	Eye Irrit. 2; H319

CLP index No.: Index No. in part 3 of Annex VI of Regulation (EC) No. 1272/2008

See SECTION 16 for full text of Hazard- and EU Hazard-statements.

Hazardous ingredients:

Chemical name	CAS No.	CLP index No.	Concentration (% w/w)	Classification according to 67/548/EEC
Pyraflufen-ethyl	129630-19-9	613-203-00-X	2.5	N; R50/53
Hydrocarbons, C10-C13, aromatics, <1% naphthalene	-	-	>60 - <70	Xn; R65, R66, N; R51/53
Butyrolactone	96-48-0	-	>5 - <15	Xn; R22, Xi; R41, R67

Hazardous ingredients (continued):

Chemical name	CAS No.	CLP index No.	Concentration (% w/w)	Classification according to 67/548/EEC
Alcohols, C12-ethoxylated*	9002-92-0	-	>2 - <7	Xi; R36/38
Xylene (mixed)	1330-20-7	601-022-00-9	>=1 - <5	R10, Xn; R20/21, Xi; R36/37/38, R65
Dimethyl succinate	106-65-0	-	>=1.5 - <=2.5	Xi; R36

CLP index No.: Index No. in part 3 of Annex VI of Regulation (EC) No. 1272/2008
See SECTION 16 for full text of R-phrases.

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures

Eye contact: Immediately flush eyes with plenty of water for at least 15 minutes. Immediately get medical attention.

Skin contact: Remove contaminated clothing. Wash with plenty of water and soap. Immediately get medical attention.

Ingestion: If swallowed, rinse mouth with water, and give one or two glasses of water to drink. Keep patient at rest and obtain medical aid. Do not induce vomiting.

Inhalation: Remove patient from exposure. Contact medical personnel.

4.2. Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the SECTION 2 and SECTION 11.

4.3. Indication of any immediate medical attention and special treatment needed

Show this safety data sheet to the doctor in attendance. If swallowed, material may be aspirated into the lungs and cause chemical pneumonitis. Treat appropriately.

SECTION 5: FIRE FIGHTING MEASURES

5.1. Extinguishing media

Suitable extinguishing media: Water spray, Foam, Dry chemical powder, Carbon dioxide
Unsuitable extinguishing media: Straight streams of water

5.2. Special hazards arising from the substance or mixture

Hazardous combustion products: Combustion or thermal decomposition may evolve toxic vapours. (HCl, HF, CO, NO_x etc.)

5.3. Advice for firefighters

Special protective equipment for fire-fighters:
Firefighters should wear proper protective equipment.

Further information: Avoid extinguishing media such as water, foam, and dry chemicals flow into pond, river and lake.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions: Evacuate non-essential personnel. Wear proper protective equipment.

6.2. Environmental precautions

Environmental precaution: Prevent spills from entering sewers, watercourse or low areas. Washings should not be poured into drains or waterway.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up: Adsorb spillage onto sand, soil or any suitable adsorbent material. Transfer to a container for disposal. Wash the spillage area with water.

6.4. Reference to other sections

Information regarding exposure controls/personal protection and disposal considerations can be found in the SECTION 8 and SECTION 13.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Advice on safe handling

Use with adequate ventilation. Avoid contact with skin and eyes. Do not breathe vapour. After handling wash face and hands thoroughly with soap and water.

7.2. Conditions for safe storage, including any incompatibilities

Advice on protection against fire and explosion

Keep away from heat and sources of ignition.

Requirements for storage areas and containers

Avoid direct sunlight. Store in a cool, dry and well-ventilated place. Keep in original containers, tightly closed.

Advice on common storage

Keep away from food, drink and animal feeding stuffs and out of reach of children. Keep locked up.

7.3. Specific end use(s)

Section 1 informs about identified end-uses.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Exposure limits values

Pyraflufen-ethyl: Not established.

8.2 Exposure controls

Engineering controls:

If practical, use with adequate ventilation in the working area. Make available in the work area emergency shower and eyewash.

Personal protective equipment:

Respiratory protection:	Wear approved respiratory protection equipment.
Eye protection:	Wear eyeglasses or chemical safety goggles.
Skin protection:	Wear suitable protective clothing and gloves to prevent skin contact.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Appearance:	pale yellow to brown liquid
Odour:	pungent
Odour threshold:	No data available
pH:	4.9/20°C (1% water suspension)
Melting point:	No data available
Initial boiling point and boiling range:	No data available
Flash point	89°C
Evaporation rate:	No data available
Flammability (solid, gas):	No data available
Upper/lower flammability or explosive limits:	No data available
Vapour pressure:	No data available
Vapour density:	No data available
Relative density	1.03/20°C
Solubility (ies):	No data available
Partition coefficient (n-octanol/water):	No data available
Auto ignition temperature	450°C
Decomposition temperature:	No data available
Viscosity:	9 mPa.s at 40°C
Explosive properties:	Not explosive
Oxidizing properties:	No oxidizing properties

9.2. Other information

Not applicable.

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity

No hazardous reactions if stored and handled as prescribed/indicated.

10.2. Chemical stability

This product considered to be stable under normal warehouse condition.

10.3. Possibility of hazardous reactions

No hazardous reactions if stored and handled as prescribed/indicated.

10.4. Conditions to avoid

Excessive heat.

10.5. Incompatible materials

Not known.

10.6. Hazardous decomposition products

No hazardous decomposition products if stored and handled as prescribed/indicated.
See also SECTION 5.2.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Acute toxicity:

Oral;	Rat LD ₅₀ (mg/kg)	female	>2,000 (OECD Guideline 423)
Dermal;	No data available		
Inhalation;	Rat LC ₅₀ (mg/L/4hr)	male, female	2.1~5.4 (OECD Guideline 403)

Irritation:

Skin irritation:	Rabbit	Severe irritant (OECD Guideline 404)
Eye irritation:	Bovine corneal opacity and permeability test	Very severe irritant

Sensitization:	Mouse LLNA-test	Positive (OECD Guideline 429)
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Repeated dose toxicity:

No data available

Carcinogenicity:

No data available.

Mutagenicity:

No data available.

Toxicity for reproduction:

No data available.

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Rainbow trout	LC ₅₀ (96 h)	>10 mg/L (OECD Guideline 203)
Daphnia	EC ₅₀ (48 h)	3.0 mg/L (OECD Guideline 202)
Green algae (<i>Selenastrum capricornutum</i>)		
	ErC ₅₀ (24-96 h)	70 µg/L (OECD Guideline 201)
	EbC ₅₀ (0-96 h)	32 µg/L (OECD Guideline 201)

12.2. Persistence and degradability

No data available for this product.

Data on pyraflufen-ethyl:

Hydrolysis	half life	13.1 days/pH7
Photolysis	half life	30 h in buffer solution (pH5, Xenon lamp)

12.3. Bioaccumulative potential

No data available.

12.4. Mobility in soil

No data available.

12.5. Results of PBT and vPvB assessment

No data available.

12.6. Other adverse effects

No adverse effects are expected.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Product: Product should be disposed of according to label instructions and/or local regulations. Do not dump into sewers, on the ground or into any body of water. Repealing liquid containing pyraflufen-ethyl should be avoided to flow into river, pond and lake.

Contaminated packaging: Dispose used container according to the local regulations.

SECTION 14: TRANSPORT INFORMATION

Land transport (ADR/RID)

14.1. UN number: 3082

14.2. UN proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (contains pyraflufen-ethyl)

14.3. Transport hazard class(es): 9

14.4. Packing group: III

14.5. Environmental hazards: YES

14.6. Special precautions for user:

Sea transport (IMDG)

14.1. UN number: 3082

14.2. UN proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (contains pyraflufen-ethyl)

14.3. Transport hazard class(es): 9

14.4. Packing group: III

14.5. Environmental hazards: MARINE POLLUTANT

14.6. Special precautions for user:

Sea transport (MARPPOL 73/78)

14.7. Transport in bulk according to Annex II of MARPPOL73/78 and the IBC Code:

Air transport (ICAO/IATA)

14.1. UN number: 3082

14.2. UN proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (contains pyraflufen-ethyl)

14.3. Transport hazard class(es): 9

14.4. Packing group: III

14.5. Environmental hazards: YES

14.6. Special precautions for user:

SECTION 15: REGULATORY INFORMATION

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

15.2. Chemical safety assessment

A chemical safety assessment according to art. 14 of Regulation (EC) No. 1907/2006 is not required, because art. 15 of the same regulation applies

SECTION 16: OTHER INFORMATION

This safety data sheet is prepared in accordance with Commission Regulation (EU) No. 453/2010.

Indication of changes:

*Revised data or information

Text of R-phrase(s) mentioned in SECTION 2 and 3 (for information only):

R10:	Flammable.
R20:	Harmful by inhalation.
R22:	Harmful if swallowed.
R20/21:	Harmful by inhalation and in contact with skin.
R36:	Irritating to eyes.
R38:	Irritating to skin.
R36/37/38:	Irritating to eyes, respiratory system and skin.
R36/38:	Irritating to eyes and skin.
R41:	Risk of serious damage to eye.
R43:	May cause sensitization by skin contact.
R50/53:	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R51/53:	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R65:	Harmful: may cause lung damage if swallowed.
R66:	Repeated exposure may cause skin dryness or cracking.
R67:	Vapours may cause drowsiness and dizziness.

Text of H-Code(s) mentioned in SECTION 2 and SECTION 3 (for information only):*

H226:	Flammable liquid and vapour.
H302:	Harmful if swallowed.
H304:	May be fatal if swallowed and enters airways.
H312:	Harmful in contact with skin.
H315:	Causes skin irritation.
H317:	May cause an allergic skin reaction.*
H318:	Causes serious eye damage.
H319:	Causes serious eye irritation.
H332:	Harmful if inhaled.
H336:	May cause drowsiness or dizziness.
H400:	Very toxic to aquatic life.
H410:	Very toxic to aquatic life with long lasting effects.
H411:	Toxic to aquatic life with long lasting effects.
EUH066:	Repeated exposure may cause skin dryness or cracking.

Labelling according to Directive 67/548/EEC or 1999/45/EC*

Hazard symbol(s):*

Xn	Harmful.*
N	Dangerous for the environment.*

R-phrase(s):*

R20	Harmful by inhalation.*
R38	Irritating to skin.*
R41	Risk of serious damage to eyes.*
R43	May cause sensitization by skin contact.*

R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.*

S-phrase(s):*

S2	Keep out of the reach of children.*
S13	Keep away from food, drink and animal feeding stuffs.*
S23	Do not breathe gas/fumes/vapour/spray.*
S24/25	Avoid contact with skin and eyes.*
S26	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.*
S37/39	Wear suitable gloves and eye/face protection.*
S56	Dispose of this material and its container to hazardous or special waste collection point.*
S61	Avoid release to the environment. Refer to special instructions/ safety data sheets.*

The information herein is given in good faith, but not warranty. The information is intended to provide general guidance as to health and safety based upon our knowledge of the handling, storage and use of product. It is not applicable to unusual or non-standard uses of product, nor where instructions or recommendations are not followed.
