

MATERIAL SAFETY DATA SHEET

(According to Regulation (EC) No. 1907/2006(REACH), Annex II, as amended by Commission Regulation (EU)2015/830)

SECTION 1. IDENTIFICATION

1.1. Product Identifier used on the Label

Substance Name	(Z)-docos-13-enamide; Erucamide
Trade Name	INNOSLIP – E SERIES (INNOSLIP-E, ER, EH, PRE)
REACH registration number	01-2119519225-45-0023
REACH registration notes	This product is not classified as hazardous, the information in this datasheet is given for guidance only.
CAS Number	112-84-5
EC Number	204-009-2

1.2. Recommended use of the Chemical and Restrictions on use

Uses	Lubricants/Slip additives for industrial(Plastics additives) purpose only.
Restrictions	Not recommended for any uses, including consumer use, other than the identified uses above.

1.3. Details of the supplier of the safety data sheet

Manufacturer	Pathwel Co., Ltd.
Address	31 Sansusandan 1-Ro, Jincheon-Gun, Deoksan-Eup, Chungbuk, 27856, Republic of Korea
Phone Number	+82-43-535-7890
Fax Number	+82-43-535-7897
Email Address	sales@pathwel.co.kr

1.4. Only Representative Information

Company	KTR Europe GmbH / Mergenthalerallee 77 D-65760 Eschborn / www.ktreurope.de
Telephone/E-Mail	+49-6196-8871720 / reach@ktreurope.de

1.5. Emergency telephone number

Phone Number	+82-43-535-7890 (Korea)
Phone Number	+49-6196-8871720 (Germany / KTR Europe GmbH)

SECTION 2. HAZARD(S) IDENTIFICATION

2.1 Hazard classification	Not classified This product was evaluated in accordance with the Industrial Safety and Health Act and the Chemical Control Act, and determined to be 'not classified'. This product is not considered hazardous in normal use as required under OSHA's Hazardous Communication Standard 29 CFR 1910.1200 The product is not classified as hazardous according to Regulation (EC) 1272/2008[CLP] as amended. The product is not a hazardous substance or mixture according to EC-directives 67/548/EEC or 1999/45/EC
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2.2 GHS label elements

Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008.

Pitogram	No Symbol
Signal word	No signal word
Hazard statements	No known significant effects or critical hazards
Precautionary statements	Not applicable

2.3 Other hazards which do not result in classification

This substance is not classified as PBT or vPvB according to current EU criteria. The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

SECTION 3. COMPOSITION / INFORMATION ON INGREDIENTS

Substance/mixture	Substance
Chemical Name	(Z)-13-Docosenamide (IUPAC)
Other means of identification	(Z)-docos-13-enamide; Erucamide; 13-Docosenamide; Erucic amide; Amoslip E; Crodamide ER; Kemamide E; cis-13-Docosenamide; Erucylamide 13-Docosenamide, (Z)- ; Erucic acid amide ; Erucylamide
CAS Number	112-84-5
EC Number	204-009-2
EU REACH Number	01-2119519225-45-0023
Weight	100%

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section. No dangerous ingredients according to Regulation (EC) No. 1907/2006.

SECTION 4. FIRST AID MEASURES

Eye Contact	Immediately wash eyes with water or saline while occasionally lifting upper and lower eyelids for at least 15 minutes until no evidence of chemical remains. Get medical attention if irritation occurs
Skin Contact	Wash contaminated skin with soap and water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Contact with hot material causes thermal skin burns. In case of burns, immediately cool affected skin with cold water and continue for as long as possible or apply wet cloths to the area until medical attention can be obtained
Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur
Ingestion	Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.
Notes to physician	In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

SECTION 5. FIRE FIGHTING MEASURES**5.1. Extinguishing media**

Suitable extinguishing Media	Use dry chemical powder.
Unsuitable extinguishing Media	Avoid high pressure media which could cause the formation of a potentially explosible dust-air mixture.

5.2. Special hazards arising from the substance or mixture

Specific hazards arising from the chemical	May form explosible dust-air mixture if dispersed
Hazardous thermal decomposition products	Decomposition products may include the following materials carbon dioxide, carbon monoxide, nitrogen oxides.

5.3. Special protective equipment and precautions for fire-fighters

Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

SECTION 6. ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing dust. Put on appropriate personal protective equipment

6.2. Environmental precautions

Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air)

6.3. Methods and material for containment and cleaning up

Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Vacuum or sweep up material and place in a designated, labelled waste container. Dispose of via a licensed waste disposal contractor. Hazard of slipping on spilled product. Where possible allow molten material to solidify naturally

SECTION 7. HANDLING AND STORAGE

7.1. Precautions for safe handling

Put on appropriate personal protective equipment (see Section 8). Avoid breathing dust. Avoid the creation of dust when handling and avoid all possible sources of ignition (spark or flame). Prevent dust accumulation. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Electrical equipment and lighting should be protected to appropriate standards to prevent dust coming into contact with hot surfaces, sparks or other ignition sources. Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by earthing and bonding containers and equipment before transferring material.

Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures

7.2. Conditions for safe storage, including any incompatibilities

Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and wellventilated area, away from incompatible materials (see Section 10) and food and drink. Eliminate all ignition sources. Separate from oxidising materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

The information in this section contains generic advice and guidance. Information is provided based on typical anticipated uses of the product. Additional measures might be required for bulk handling or other uses that could significantly increase worker exposure or environmental releases.

8.1. Control parameters

Occupational exposure limits

Ingredient name	Exposure limits	
(Z)-docos-13-enamide	ACGIH TLV (United States)	TWA: 3 mg/m ³ , (respirable particulate matter) TWA: 10 mg/m ³ , (Dust) Form: Inhalable
	Regulation on Limit Values - MAC (Austria)	TWA: 10 mg/m ³ , (Dust) 8 hours. Form: Inhalable Dust TWA: 5 mg/m ³ , (Dust) 8 hours. Form: Respirable fraction
	Limit values (Belgium)	TWA: 3 mg/m ³ , (Particulates, not otherwise regulated) 8 hours. Form: Respirable fraction TWA: 10 mg/m ³ , (Particulates, not otherwise regulated) 8 hours. Form: Total particulates
	Working Environment Authority (Denmark)	GV: 10 mg/m ³ , (Dust) 8 hours. Form: Inhalable Dust
	Ministry of Labor (France)	VME: 10 mg/m ³ , (Dust) 8 hours. Form: Inhalable Dust
	TRGS 900 OEL (Germany)	Schichtmittelwert: 10 mg/m ³ , (Dust) 8 hours. Form: Inhalable Dust Schichtmittelwert: 1.25 mg/m ³ , (Dust) 8 hours. Form: Respirable dust
	DFG MAC-values list (Germany)	Schichtmittelwert: 4 mg/m ³ , (Dust) 8 hours. Form: Inhalable Dust Schichtmittelwert: 0.3 mg/m ³ , (Dust) 8 hours. Form: Respirable dust
	5/2020. (II. 6.) ITM Decree (Hungary).	TWA: 10 mg/m ³ , (Dust) 8 hours. Form: Inhalable Dust TWA: 6 mg/m ³ , (Dust) 8 hours. Form: Respirable dust
	Regulation of the Minister of Family, Labor and Social Policy (Poland)	TWA: 10 mg/m ³ , (Dust) 8 hours. Form: Inhalable Dust

	National institute of occupational safety and health (Spain)	VLA-ED: 10 mg/m ³ , (Dust) 8 hours. Form: Inhalable Dust VLA-ED: 3 mg/m ³ , (Dust) 8 hours. Form: Respirable dust
	Work environment authority Regulation 2020:6 (Sweden)	NGV: 10 mg/m ³ , (Dust) 8 hours. Form: Inhalable Dust NGV: 5 mg/m ³ , (Dust) 8 hours. Form: Respirable fraction
	SUVA (Switzerland)	MAK: 10 mg/m ³ , (Dust) 8 hours. Form: Inhalable Dust MAK: 3 mg/m ³ , (Dust) 8 hours. Form: Respirable dust

DNEL

DNEL = Derived No-Effect Level (for workers)

Worker DNEL long term inhalation systemic (mg/m³) : 176

Worker DNEL long term dermal systemic (mg/kg bw/day) : 500

General population DNEL short term inhalation local (mg/ m³) : 219

General population DNEL long term inhalation systemic (mg/ m³) : 43.9

General population DNEL long term dermal systemic (mg/kg bw/day) : 250

General population DNEL long term oral systemic (mg/kg bw/day) : 5

PNEC

PNEC = Predicted No Effect Concentration

PNEC fresh water (mg/l) : 0.00797

PNEC marine water (mg/l) : 0.0008

PNEC intermittent release (mg/l) : 0.010

PNEC Sewage Treatment Plant (mg/l) : 1.28

PNEC sediment fresh water (mg/kg) : 136

PNEC sediment marine water (mg/kg) : 13.6

PNEC soil (mg/kg) : 0.73

PNEC oral (mg/kg food) : 250

8.2. Exposure controls**8.2.1 Appropriate engineering controls**

Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapour or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

8.2.2 Individual protection measures, such as personal protective equipments.

- 1) Emergency-shower and facilities for rinsing eyes must be accessible.
- 2) Personal protective equipment
 - a. Eye protection : Safety glasses with side-shields (frame goggles) (e.g. EN 166).
 - b. Skin protection:
 - (i) Hand protection : Wear suitable protective gloves of neoprene or synthetic rubber.
 - (ii) Skin and body : Wear suitable protective clothing.protection
 - c. Respiratory protection : In case of dust formation use dust mask.

8.2.3 Environmental exposure controls

General advice : Prevent product from entering municipal drains.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Solid(Beads, powder),@25°C	pH	Not determined
Colour	Off white	Kinematic viscosity	Not determined
Odor	Slightly fatty odor	Solubility in water	< 0.738 µg/L @20°C
Melting / Freezing Point	80~84°C (176~184°F)	Partition coefficient n-octanol/water (log value)	Not determined
Boiling Point	460~488°C (*ECHA)	Vapor Pressure	0.00005 Pa @25°C
Flammability (Solid, Gas)	Non flammable	Relative Density	0.908(@20°C) (*ECHA)
Lower and upper explosion limit	Not determined	Relative vapour density	Not determined
Flash Point	Not applicable	Particle size(PSD)	Beads : 1~1.5 mm Microbeads : 0.3~0.4 mm Fine powder : 0.01~0.1 mm
Auto-ignition temperature	Not determined	Molecular weight	337.56 (*ChemIDplus)
Decomposition Temperature	305°C (581°F)		

SECTION 10. STABILITY AND REACTIVITY**10.1. Reactivity**

No hazardous reaction is known under normal temperature and pressure.

10.2. Chemical stability

Stable under normal temperature and pressure, please follow recommended storage conditions.

10.3. Possibility of hazardous reactions

No hazardous polymerization or reaction has been reported to occur under normal temperature and pressure.

10.4. Conditions to avoid

Avoid the creation of dust when handling and avoid all possible sources of ignition (spark or flame). Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by earthing and bonding containers and equipment before transferring material. Prevent dust accumulation
Keep away from strong acids, oxidizing agents, extreme pressure, heat and other extreme conditions

10.5. Incompatible materials

Reactive or incompatible with the following materials : oxidizing agents and Strong acids

10.6. Hazardous decomposition products

None under normal temperature and pressure.

SECTION 11. TOXICOLOGICAL INFORMATION

11.1. Primary routes of exposure

Common routes of entry are ingestion, inhalation and contact with eye or skin.

11.2. symptoms related to physical,chemical and toxicological characteristics

No information available

11.3. Acute toxicity

Oral Toxicity	LD ₅₀ > 2,500 mg/kg bw ,Rat
Dermal Toxicity	LD ₅₀ > 2,000 mg/kg bw ,Rat
Inhalation Toxicity	LC ₅₀ > 2.8 mg/L air , Rat

11.4. Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin Corrosion / Irritation	No irritation
Eye Damage / Irritation	No data available
Sensitization	No data available
Mutagenicity	Negative
Carcinogen Status	No data available
Reproductive Toxicity	No data available
STOT – Single	No data available
STOT – Repeated	No data available
Aspiration Hazard	No data available

SECTION 12. ECOLOGICAL INFORMATION

12.1. Ecotoxicity

Fish - Danio Rerio	NOEC >105 ppm , 28 days
Crustaceans	NOEC >77 ppm , 21 days
Algae - Pseudokirchneriella subcapitata	EC50 >100 ppm , 72 hours

12.2. Persistence and degradability

>64 % - Readily - 28 days / OECD TG 301B (Readily biodegradable)

12.3. Bioaccumulative potential

LogPow : 8

Potential : high

12.4. Mobility in soil

Soil/water partition coefficient (K_{oc}) : Not available.

12.5. Results of PBT and vPvB assessment

This substance is not classified as PBT or vPvB according to current EU criteria.

12.6. Other adverse effects

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

SECTION 13. DISPOSAL CONSIDERATIONS**13.1. Disposal methods**

The generation of waste should be avoided or minimised wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and nonrecyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible

13.2. Disposal precautions

This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers

SECTION 14. TRANSPORT INFORMATION

UN Number	Not restricted / regulated
UN Proper Shipping Name	Not restricted / regulated
Transport Hazard Class	Not restricted / regulated
Packing Group	Not restricted / regulated
Environmental Hazards	Not restricted / regulated
Transport in Bulk	Not restricted / regulated
Special Precautions	Not classified as dangerous in the meaning of transport regulations.

SECTION 15. REGULATORY INFORMATION**15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture**

Regulation (EC) No 1907/2006 (REACH) of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (as amended).

Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures (as amended). COMMISSION REGULATION (EU) 2020/878 of 18 June 2020

Substances of very high concern (SVHC) : None of the components are listed.

Annex XVII – Restrictions (on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles) : Not applicable.

Ozone depleting substances (1005/2009/EU) : Not listed.

Prior Informed Consent (PIC) (649/2012/EU) : Not listed.

15.2. National regulations**Germany**

Storage class (TRGS 510) : 13

Water hazard class : WGK 1 low hazard to waters

Italy

D.Lgs. 152/06 : Not determined.

Netherlands

Water Discharge Policy (ABM) : A(4) Low hazard for aquatic organisms, may have long-term hazardous effects in aquatic environment.
Decontamination effort: A

15.3. Regulation according to ISHA

ISHA article 37 (Harmful substances prohibited from manufacture) None of the components are listed

ISHA article 38 (Harmful substances requiring permission) None of the components are listed

Article 2 of Youth Protection Act on Substances Hazardous to Youth Not applicable

ISHA Enforcement Regs Annex 11-3 (Exposure standards established for harmful factors) None of the components are listed

ISHA Enforcement Regs Annex 11-5 (Harmful factors subject to Work Environment Measurement) None of the components are listed

ISHA Enforcement Regs Annex 12-2 (Harmful Factors Subject to Special Health Checkup) None of the components are listed

Standard of Industrial Safety and Health Annex 12 (Hazardous substances subject to control) None of the components are listed

15.4. Regulation according to Chemicals Control Act

CCA Article 11 (TRI) None of the components are listed

CCA Article 18 None of the components are listed. Prohibited (K-Reach Article 27) None of the components are listed

CCA Article 19 Subject to authorization (K-Reach Article 25) Not applicable

CCA Article 20 Toxic Not applicable Chemicals None of the components are listed (K-Reach Article 20)

CCA Article 20 Restricted (K-Reach Article 27) None of the components are listed

CCA Article 39 (Accident Precaution Chemicals) None of the components are listed

Existing Chemical Substances Subject to Registration None of the components are listed

15.5. Dangerous Materials Safety Management Act

Not available

15.6. Wastes regulation

Dispose of contents and container in accordance with all local, regional, national and international regulations

15.7. Regulation according to other foreign laws International regulations

CERCLA Section 103 (40CFR302.4) : Not listed

SARA Section 302 (40CFR355.30) : Not listed

SARA Section 304 (40CFR355.40) : Not listed

SARA Section 313 (40CFR372.65) : Not listed

SARA Section 311/312 (40CFR370.21) : Not listed

OSHA Process Safety (29CFR1910.119) : Not listed
 California Proposition 65 : Not listed
 Canadian Toxic Substances List - Schedule 1 : Not listed
 Chemical Weapon Convention List Schedules I, II & III Chemicals : Not listed
 Montreal Protocol : Not listed
 Stockholm Convention on Persistent Organic Pollutants : Not listed
 Rotterdam Convention on Prior Informed Consent (PIC) : Not listed
 UNECE Aarhus Protocol on POPs and Heavy Metals : Not listed

15.8. Inventory list

Australia (AICS)	On the inventory or in compliance with the inventory
Canada (DSL)	On the inventory or in compliance with the inventory
China (IECSC)	On the inventory or in compliance with the inventory
EU (EINECS/ ELINCS)	On the inventory or in compliance with the inventory
Japan (ENCS)	On the inventory or in compliance with the inventory
Japan (ISHL)	Not determined
New Zealand (NZIoc)	On the inventory or in compliance with the inventory
Philippines (PICCS)	On the inventory or in compliance with the inventory
Republic of Korea (KECL)	On the inventory or in compliance with the inventory
Taiwan (TCSI)	On the inventory or in compliance with the inventory
Thailand	On the inventory or in compliance with the inventory
Turkey	On the inventory or in compliance with the inventory
USA(TSCA)	On the inventory or in compliance with the inventory
Vietnam	On the inventory or in compliance with the inventory

SECTION 16. OTHER INFORMATION

Prepared By Pathwel Co., Ltd.
Last Revision Date May 23, 2024
Version 10
Disclaimer

Information, advice and statement in this document is based on our present knowledge and current regulations. The use of this product for non-recommended purpose without our written confirmation does so at his own risk. We do not accept any liability whatsoever for any loss or damage arising out of the use of this product. It is the responsibility of the user to take all measures to comply with the local rules and regulations. This safety data sheet is subject to modification in light of new information and changes in regulations. Therefore, it is the user's responsibility to verify that this data sheet is current.