

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

Perihal Produk: PRAS (VPI) PY with Amygdalin
Product Description: PRAS (VPI) PY with Amygdalin
Cat No. : R05169

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

Recommended Use Laboratory chemicals.
Uses advised against No Information available

Details of the supplier of the safety data sheet

Company Thermo Scientific Microbiology Sdn Bhd
No.6, Jalan TTC 6, Taman Teknologi Cheng,
Cheng, 75250 Melaka, Malaysia
+606 334 0975 .

Supplier Remel
12076 Santa Fe Drive Lenexa,
KS 66215 United States
Telephone: 1-800-255-6730
Fax:1-800-621-8251

E-mail address mbd-sds@thermofisher.com

Emergency Telephone Number

(603) 5122 8888
CHEMTREC Malaysia 1-800-815-308 (Malay)
CHEMTREC Malaysia (Kuala Lumpur) +(60)-327884561 (Malay)

SECTION 2: HAZARDS IDENTIFICATION**Classification of the substance or mixture****Label Elements****Hazard Statements****Precautionary Statements****Other Hazards**

This product does not contain any known or suspected endocrine disruptors

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

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| Component | CAS No | Weight % |
|--|------------|----------|
| Water | 7732-18-5 | 97.46 |
| Caseins, hydrolyzates | 65072-00-6 | 0.49 |
| Yeast, ext. | 8013-01-2 | 0.97 |
| Ethyl alcohol | 64-17-5 | Trace |
| Phylloquinone | 84-80-0 | Trace |
| Sodium hydroxide | 1310-73-2 | Trace |
| Ferrate(2-), chloro[7,12-diethenyl-3,8,13,17-tetramethyl-21H,23H-porphine-2,18-dipropano ato(4-)-N21,N22,N23,N24]-, dihydrogen, (SP-5-13)- | 16009-13-5 | Trace |
| Cysteine hydrochloride, L-(+)-, monohydrate | 7048-04-6 | Trace |
| Calcium chloride | 10043-52-4 | Trace |
| Dipotassium phosphate | 7758-11-4 | Trace |
| Dihydrogen potassium phosphate | 7778-77-0 | Trace |
| Sodium carbonate | 497-19-8 | Trace |
| Sodium chloride | 7647-14-5 | Trace |
| 3H-Phenoxazin-3-one, 7-hydroxy-, 10-oxide, sodium salt | 62758-13-8 | Trace |
| Magnesium sulfate | 7487-88-9 | Trace |
| Methyl alcohol | 67-56-1 | Trace |

SECTION 4: FIRST AID MEASURES

Description of first aid measures

| | |
|---|--|
| Eye Contact | Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician. |
| Skin Contact | Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. |
| Ingestion | Clean mouth with water and drink afterwards plenty of water. |
| Inhalation | Remove to fresh air. |
| Self-Protection of the First Aider | No special precautions required. |
| <u>Most important symptoms and effects, both acute and delayed</u> | No information available. |

Indication of any immediate medical attention and special treatment needed

Notes to Physician Treat symptomatically.

SECTION 5: FIREFIGHTING MEASURES

Extinguishing media

Suitable Extinguishing Media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Extinguishing media which must not be used for safety reasons

No information available.

Special hazards arising from the substance or mixture

Thermal decomposition can lead to release of irritating gases and vapors.

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Hazardous Combustion Products

None under normal use conditions.

Advice for fire-fighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures

Ensure adequate ventilation.

Environmental precautions

See Section 12 for additional Ecological Information.

Methods and Material for Containment and Cleaning Up

Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Keep in suitable, closed containers for disposal.

Reference to Other Sections

Refer to protective measures listed in Sections 8 and 13.

SECTION 7: HANDLING AND STORAGE

Precautions for Safe Handling

Ensure adequate ventilation.

Conditions for Safe Storage, Including any Incompatibilities

Keep container tightly closed in a dry and well-ventilated place.

Specific End Uses

Use in laboratories.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters

| Component | Malaysia | ACGIH TLV | OSHA PEL |
|---|----------|-------------------------------|--|
| Ethyl alcohol | | STEL: 1000 ppm | (Vacated) TWA: 1000 ppm (Vacated) TWA: 1900 mg/m ³ TWA: 1000 ppm TWA: 1900 mg/m ³ |
| Sodium hydroxide | | Ceiling: 2 mg/m ³ | (Vacated) Ceiling: 2 mg/m ³ TWA: 2 mg/m ³ |
| Ferrate(2-), chloro[7,12-diethenyl-3,8,13,17-tetra methyl-21H,23H-porphine-2,18-dipr opanoato(4-)-N21,N22,N23,N24]-, dihydrogen, (SP-5-13)- | | TWA: 1 mg/m ³ | (Vacated) TWA: 1 mg/m ³ |
| Methyl alcohol | | TWA: 200 ppm STEL: 250 ppm | (Vacated) TWA: 200 ppm (Vacated) TWA: 260 mg/m ³ |

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| | | | |
|--|--|------|--|
| | | Skin | (Vacated) STEL: 250 ppm (Vacated) STEL: 325 mg/m ³ Skin TWA: 200 ppm TWA: 260 mg/m ³ |
|--|--|------|--|

| Component | European Union | The United Kingdom | Germany |
|---|--|---|---|
| Ethyl alcohol | | TWA: 1000 ppm TWA; 1920 mg/m ³ TWA WEL - STEL: 3000 ppm STEL; 5760 mg/m ³ STEL | 200 ppm TWA MAK; 380 mg/m ³ TWA MAK |
| Sodium hydroxide | | 2 mg/m ³ STEL | 2 mg/m ³ TWA (inhalable fraction) |
| Ferrate(2-), chloro[7,12-diethenyl-3,8,13,17-tetra methyl-21H,23H-porphine-2,18-dipr opanoato(4-)-N21,N22,N23,N24]-, dihydrogen, (SP-5-13)- | | STEL: 2 mg/m ³ 15 min TWA: 1 mg/m ³ 8 hr | |
| Methyl alcohol | TWA: 200 ppm 8 hr TWA: 260 mg/m ³ 8 hr Skin | WEL - TWA: 200 ppm TWA; 266 mg/m ³ TWA WEL - STEL: 250 ppm STEL; 333 mg/m ³ STEL | 100 ppm TWA MAK; 130 mg/m ³ TWA MAK Skin absorber |

Exposure Controls

Engineering Measures

None under normal use conditions.

Personal protective equipment

Eye Protection

Wear safety glasses with side shields (or goggles)

Hand Protection

Protective gloves

Skin and body protection

Long sleeved clothing

Inspect gloves before use.

Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves.
(Refer to manufacturer/supplier for information)

Ensure gloves are suitable for the task: Chemical compatability, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion.

Remove gloves with care avoiding skin contamination.

Respiratory Protection

No protective equipment is needed under normal use conditions

Recommended Filter type:

Particle filter

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice

Environmental exposure controls

No information available

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance

Physical State

Liquid

Odor

No information available

Odor Threshold

No data available

pH

No information available

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| | | |
|--|--------------------------|--|
| Melting Point/Range | No data available | |
| Softening Point | No data available | |
| Boiling Point/Range | No information available | |
| Flash Point | No information available | Method - No information available |
| Evaporation Rate | No data available | |
| Flammability (solid,gas) | Not applicable | Liquid |
| Explosion Limits | No data available | |
| Vapor Pressure | No data available | |
| Vapor Density | No data available | (Air = 1.0) |
| Specific Gravity / Density | No data available | |
| Bulk Density | Not applicable | Liquid |
| Water Solubility | No information available | |
| Solubility in other solvents | No information available | |
| Partition Coefficient (n-octanol/water) | | |
| Component | log Pow | |
| Ethyl alcohol | -0.32 | |
| Methyl alcohol | -0.74 | |
| Autoignition Temperature | No data available | |
| Decomposition Temperature | No data available | |
| Viscosity | No data available | |
| Explosive Properties | No information available | |
| Oxidizing Properties | No information available | |
| VOC Content(%) | 0.0105 | |

SECTION 10: STABILITY AND REACTIVITY

Reactivity

None known, based on information available.

Chemical Stability

Stable under normal conditions.

Possibility of Hazardous Reactions

| | |
|---------------------------------|---------------------------|
| Hazardous Polymerization | No information available. |
| Hazardous Reactions | No information available. |

Conditions to Avoid

None known.

Incompatible Materials

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None known.

Hazardous Decomposition Products

None under normal use conditions.

SECTION 11: TOXICOLOGICAL INFORMATION

Information on Toxicological Effects

Acute Toxicity

Toxicology data for the components

| Component | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|--------------------------------|--------------------------------|-------------------------------|-------------------------------|
| Water | - | - | - |
| Ethyl alcohol | LD50 = 7060 mg/kg (Rat) | | 20000 ppm/10H (Rat) |
| Phylloquinone | LD50 > 33487 mg/kg (Rat) | | |
| Sodium hydroxide | LD50 = 325 mg/kg (Rat) | LD50 = 1350 mg/kg (Rabbit) | |
| Calcium chloride | 2301 mg/kg (Rat) | LD50 > 5000 mg/kg (Rabbit) | |
| Dipotassium phosphate | 8 g/kg (rat) | LD50 > 5000 mg/kg (Rabbit) | |
| Dihydrogen potassium phosphate | LD50 = 3200 mg/kg (Rat) | LD50 > 4640 mg/kg (Rabbit) | LC50 > 0.83 mg/L (Rat) 4 h |
| Sodium carbonate | 2800 mg/kg (Rat) | > 2000 mg/kg (rabbit) | 2.3 mg/l 2h (Rat) |
| Sodium chloride | LD50 = 3 g/kg (Rat) | LD50 > 10000 mg/kg (Rabbit) | LC50 > 42 mg/L (Rat) 1 h |
| Methyl alcohol | LD50 = 1187 – 2769 mg/kg (Rat) | LD50 = 17100 mg/kg (Rabbit) | LC50 = 128.2 mg/L (Rat) 4 h |

Chronic Toxicity Carcinogenicity

This product contains one or more substances which are classified by IARC as carcinogenic to humans (Group I), probably carcinogenic to humans (Group 2A) or possibly carcinogenic to humans (Group 2B) The table below indicates whether each agency has listed any ingredient as a carcinogen Ethanol has been shown to be carcinogenic in long-term studies only when consumed and abused as an alcoholic beverage.

Sensitization Mutagenic Effects Reproductive Effects Developmental Effects Target Organs

No information available
No information available
No information available
No information available
No information available.

SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicity effects

Contains no substances known to be hazardous to the environment or that are not degradable in waste water treatment plants.

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| Component | Freshwater Fish | Water Flea | Freshwater Algae | Microtox |
|-------------------|---|--|--|---|
| Ethyl alcohol | Fathead minnow (Pimephales promelas) LC50 = 14200 mg/l/96h | EC50 = 9268 mg/L/48h EC50 = 10800 mg/L/24h | EC50 (72h) = 275 mg/l (Chlorella vulgaris) | Photobacterium phosphoreum:EC50 = 34634 mg/L/30 min Photobacterium phosphoreum:EC50 = 35470 mg/L/5 min |
| Sodium hydroxide | LC50: = 45.4 mg/L, 96h static (Oncorhynchus mykiss) | - | - | - |
| Calcium chloride | Lepomis macrochirus: LC50: 10650 mg/L/96h | EC50: 52 mg/L/48h | | |
| Sodium carbonate | Lepomis macrochirus: LC50: 300 mg/L/96h Gambusia affinis: LC50: 740 mg/L/96h | EC50: = 265 mg/L, 48h (Daphnia magna) | | - |
| Sodium chloride | Pimephals prome: LC50: 7650 mg/L/96h | EC50: 1000 mg/L/48h | | |
| Magnesium sulfate | LC50: 2610 - 3080 mg/L, 96h static (Pimephales promelas) | EC50: 266.4 - 417.3 mg/L, 48h Static (Daphnia magna) | EC50: = 2700 mg/L, 72h (Desmodesmus subspicatus) | = 84000 mg/L EC50 Photobacterium phosphoreum 30 min |
| Methyl alcohol | Pimephales promelas: LC50 > 10000 mg/L 96h | EC50 > 10000 mg/L 24h | | EC50 = 39000 mg/L 25 min EC50 = 40000 mg/L 15 min EC50 = 43000 mg/L 5 min |

Persistence and degradability No information available

| Component | Degradability |
|-------------------------------------|--------------------------------|
| Methyl alcohol 67-56-1 (Trace) | DT50 ~ 17.2d >94% after 20d |

Bioaccumulative potential No information available

| Component | log Pow | Bioconcentration factor (BCF) |
|----------------|---------|-------------------------------|
| Ethyl alcohol | -0.32 | No data available |
| Methyl alcohol | -0.74 | <10 dimensionless |

Mobility in soil No information available. .

Other adverse effects No information available

SECTION 13: DISPOSAL CONSIDERATIONS

Waste treatment methods

Waste from Residues/Unused Products Dispose of in accordance with local regulations

Contaminated Packaging Empty containers should be taken to an approved waste handling site for recycling or disposal

SECTION 14: TRANSPORT INFORMATION

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IMDG/IMO Not regulated

Road and Rail Transport Not regulated

IATA Not regulated

Special Precautions for User No special precautions required

SECTION 15: REGULATORY INFORMATION

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

International Inventories X = listed

| Component | EINECS | TSCA | DSL | PICCS | ENCS | ISHL | IECSC | AICS | KECL |
|---|-----------|------|-----|-------|------|------|-------|------|------------|
| Water | 231-791-2 | X | X | X | X | | X | X | KE-35400 |
| Caseins, hydrolyzates | - | X | X | X | X | X | X | X | KE-05-0318 |
| Yeast, ext. | - | X | X | X | - | | X | X | KE-05-1355 |
| Ethyl alcohol | - | X | X | X | X | X | X | X | KE-13217 |
| Phylloquinone | - | X | X | X | X | X | X | X | KE-24853 |
| Sodium hydroxide | 215-185-5 | X | X | X | X | X | X | X | KE-31487 |
| Ferrate(2-), chloro[7,12-diethenyl-3,8,13,17-tetramethyl-21H,23H-porphine-2,18-dipropionato(4-)-N21,N22,N23,N24]-, dihydrogen, (SP-5-13)- | 240-140-1 | X | X | - | X | X | X | - | - |
| Cysteine hydrochloride, L-(+)-, monohydrate | - | - | - | X | X | | X | X | KE-01430 |
| Calcium chloride | 233-140-8 | X | X | X | X | X | X | X | KE-04496 |
| Dipotassium phosphate | - | X | X | X | X | X | X | X | KE-12167 |
| Dihydrogen potassium phosphate | - | X | X | X | X | X | X | X | KE-28622 |
| Sodium carbonate | - | X | X | X | X | X | X | X | KE-31380 |
| Sodium chloride | - | X | X | X | X | X | X | X | KE-31387 |
| 3H-Phenoxazin-3-one, 7-hydroxy-, 10-oxide, sodium salt | - | X | X | X | - | | X | X | - |
| Magnesium sulfate | - | X | X | X | X | X | X | X | KE-22752 |
| Methyl alcohol | - | X | X | X | X | X | X | X | KE-23193 |

| Component | Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification | Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements | Rotterdam Convention (PIC) | Basel Convention (Hazardous Waste) |
|------------------|---|--|----------------------------|------------------------------------|
| Ethyl alcohol | | | | Annex I - Y42 |
| Sodium hydroxide | | | | Annex I - Y35 |
| Methyl alcohol | 500 tonne | 5000 tonne | | |

National Regulations

Persistent Organic Pollutant
Ozone Depletion Potential

This product does not contain any known or suspected substance
This product does not contain any known or suspected substance

SECTION 16: OTHER INFORMATION

Legend

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CAS - Chemical Abstracts Service

EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

IECSC - Chinese Inventory of Existing Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

ENCS - Japanese Existing and New Chemical Substances

AICS - Australian Inventory of Chemical Substances

NZIoC - New Zealand Inventory of Chemicals

WEL - Workplace Exposure Limit

ACGIH - American Conference of Governmental Industrial Hygienists

RPE - Respiratory Protective Equipment

LC50 - Lethal Concentration 50%

POW - Partition coefficient Octanol:Water

TWA - Time Weighted Average

IARC - International Agency for Research on Cancer

LD50 - Lethal Dose 50%

EC50 - Effective Concentration 50%

ADR - European Agreement Concerning the International Carriage of Dangerous Goods by Road

IMO/IMDG - International Maritime Organization/International Maritime Dangerous Goods Code

OECD - Organisation for Economic Co-operation and Development

BCF - Bioconcentration factor

ICAO/IATA - International Civil Aviation Organization/International Air Transport Association

MARPOL - International Convention for the Prevention of Pollution from Ships

ATE - Acute Toxicity Estimate

VOC - (Volatile Organic Compound)

Key literature references and sources for data

<https://echa.europa.eu/information-on-chemicals>

Suppliers safety data sheet, Chemadvisor - LOLI, Merck index, RTECS

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Revision Summary

Not applicable.

In accordance with local and national regulations: Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

End of Safety Data Sheet