

SAFETY DATA SHEET



1. Identification

Product identifier	Engain 20 Ractopamine Hydrochloride Premix (70005)
Other means of identification	
Synonyms	Ractopamine Type A Premix * Engain 45 * Actogain 100 * Actogain 45 * Engain 100 * Engain 20 * Engain 9 * Engain 20 Ractopamine Hydrochloride Premix
Recommended use of the chemical and restrictions on use	
Recommended use	Veterinary product (Feed additive)
Restrictions on use	Not for human use
Details of manufacturer or importer	
Company Name (AU)	Zoetis Australia Pty Ltd ABN 94 156 476 425 Level 6, 5 Rider Boulevard Rhodes NSW 2138 AUSTRALIA
Tel	1800 814 883
Fax	(02) 8876 0444
Email	productsupport.au@zoetis.com
Emergency Phone	1800 814 883 (all hours)
Police and Fire Brigade	Dial 000
If ineffective	Dial Poisons Information Centre (13 1126 from anywhere in Australia)

2. Hazard(s) identification

Classification of the hazardous chemical

Physical hazards	Not classified.	
Health hazards	Serious eye damage/eye irritation	Category 2A
	Sensitization, skin	Category 1
	Specific target organ toxicity following repeated exposure	Category 2 (cardiovascular system)
Environmental hazards	Not classified.	

Label elements, including precautionary statements

Hazard symbol(s)



Signal word	Warning
Hazard statement(s)	May cause an allergic skin reaction. Causes serious eye irritation. May cause damage to organs (cardiovascular system) through prolonged or repeated exposure.
Precautionary statement(s)	
Prevention	Do not breathe dust/fume/gas/mist/vapours/spray. Wash thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Wear eye protection/face protection. Wear protective gloves.
Response	Get medical advice/attention if you feel unwell. IF ON SKIN: Wash with plenty of soap and water. If skin irritation or rash occurs: Get medical advice/attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention. Wash contaminated clothing before reuse.
Storage	Store away from incompatible materials.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.

Supplemental information	Beta-adrenergic agonist.
Other hazards which do not result in classification	May form combustible dust concentrations in air.

3. Composition/information on ingredients

Mixture

Identity of chemical ingredients	CAS number and other unique identifiers	Concentration of ingredients (%)
Ractopamine Hydrochloride	90274-24-1	2-10
Corn grits	Not assigned	*
Soybean oil	8001-22-7	*

Composition comments	*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.
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4. First-aid measures

Description of necessary first aid measures

Inhalation	If inhaled, remove to fresh air. If breathing is difficult, trained personnel should give oxygen. Get medical attention immediately.
Skin contact	Remove contaminated clothing immediately and wash skin with soap and water. Seek medical attention. Wash contaminated clothing before reuse. In case of eczema or other skin disorders: Seek medical attention and take along these instructions.
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician or poison control centre immediately.
Ingestion	Rinse mouth. Call a physician or poison control centre immediately. Only induce vomiting at the instruction of medical personnel. Never give anything by mouth to an unconscious person.
Personal protection for first-aid responders	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance. Wash contaminated clothing before reuse.
Symptoms caused by exposure	Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Dusts may irritate the respiratory tract, skin and eyes. May cause an allergic skin reaction. Dermatitis. Rash. Prolonged exposure may cause chronic effects.
Medical attention and special treatment	Beta-adrenergic agonist. Monitor respiratory, cardiac and central nervous system. Provide general supportive measures and treat symptomatically. Keep victim warm. Keep victim under observation. Symptoms may be delayed.

5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO ₂). Apply extinguishing media carefully to avoid creating airborne dust.
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	During fire, gases hazardous to health may be formed. Explosion hazard: Avoid generating dust; fine dust dispersed in air in sufficient concentrations and in the presence of an ignition source is a potential dust explosion hazard.
Special protective equipment and precautions for fire fighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Fire fighting equipment/instructions	In case of fire and/or explosion do not breathe fumes. Move containers from fire area if you can do so without risk. Use water spray to cool unopened containers. During all fire fighting activities, wear appropriate protective equipment, including self-contained breathing apparatus.
Hazchem code	None.
General fire hazards	Fine particles (such as dust and mists) may fuel fires/explosions. May form combustible dust concentrations in air.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel	Keep unnecessary personnel away.
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For emergency responders	Wear appropriate protective equipment and clothing during clean-up. Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Ventilate the contaminated area. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Do not breathe dust. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.
Environmental precautions	Avoid release to the environment. Inform appropriate managerial or supervisory personnel of all environmental releases. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.
Methods and materials for containment and cleaning up	Ensure adequate ventilation. Avoid the generation of dusts during clean-up. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Prevent product from entering drains. Large Spills: Stop the flow of material, if this is without risk. Collect spill with an inert, non-combustible absorbent material and transfer to labeled container for disposal. Clean contaminated surface thoroughly. Prevent release to the environment. Small Spills: Wipe up with a damp cloth and place in container for disposal. Clean surface thoroughly to remove residual contamination. Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.

7. Handling and storage

Precautions for safe handling	Wear appropriate personal protective equipment. Provide adequate ventilation. Minimise dust generation and accumulation. Avoid significant deposits of material, especially on horizontal surfaces, which may become airborne and form combustible dust clouds and may contribute to secondary explosions. Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces. Dry powders can build static electricity charges when subjected to the friction of transfer and mixing operations. Provide adequate precautions, such as electrical grounding and bonding, or inert atmospheres. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Do not breathe dust. Provide appropriate exhaust ventilation at places where dust is formed. Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. When using, do not eat, drink or smoke. Wash hands thoroughly after handling. Avoid release to the environment. Observe good industrial hygiene practices.
Conditions for safe storage, including any incompatibilities	Store locked up. Keep away from heat and sources of ignition. Keep containers tightly closed in a dry, cool and well-ventilated place. Storage Temperature: < 25C / 77F.

8. Exposure controls and personal protection

Control parameters	Follow standard monitoring procedures.
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Occupational exposure limits

UK. EH40 Workplace Exposure Limits (WELs)

Components	Type	Value	Form
Soybean oil (CAS 8001-22-7)	TWA	4 mg/m3	Respirable dust.
		10 mg/m3	Inhalable dust.

Germany. DFG MAK List (advisory OELs). Commission for the Investigation of Health Hazards of Chemical Compounds in the Work Area (DFG)

Components	Type	Value	Form
Soybean oil (CAS 8001-22-7)	TWA	4 mg/m3	Inhalable dust.

Biological limit values	No biological exposure limits noted for the ingredient(s).
Control banding approach	Ractopamine hydrochloride: Zoetis OEB 3 (control exposure to the range of 10ug/m3 to < 100ug/m3)
Appropriate engineering controls	Provide adequate general and local exhaust ventilation. Ventilation should be sufficient to effectively remove and prevent buildup of any dusts or fumes that may be generated during handling or thermal processing. Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.
Individual protection measures, for example personal protective equipment (PPE)	
Eye/face protection	Wear safety glasses with side shields (or goggles).

Skin protection	
Hand protection	Wear appropriate chemical resistant gloves.
Other	Wear appropriate chemical resistant clothing.
Respiratory protection	In case of insufficient ventilation, wear suitable respiratory equipment. If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. If airborne exposures are within or exceed the Occupational Exposure Band (OEB) range, wear an appropriate respirator with a protection factor sufficient to control exposures to the bottom of the OEB range. Respiratory protection should be provided in instances where exposure to dust, mists, aerosols or vapors are likely.
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.
Hygiene measures	When using, do not eat, drink or smoke. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Contaminated work clothing should not be allowed out of the workplace.

9. Physical and chemical properties

Appearance	Granular solid
Physical state	Solid.
Form	Solid.
Colour	Brown.
Odour	Not available.
Odour threshold	Not available.
pH	Not available.
Melting point/freezing point	Not available.
Initial boiling point and boiling range	Not available.
Flash point	Not available.
Evaporation rate	Not available.
Flammability (solid, gas)	Not available.
Upper/lower flammability or explosive limits	
Explosive limit - lower (%)	Not available.
Explosive limit – upper (%)	Not available.
Vapour pressure	Not available.
Vapour density	Not available.
Relative density	Not available.
Solubility(ies)	
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.
Other physical and chemical parameters	
Dust explosion properties	
Pmax	9.7 bar
dP/dT	586 bar/s
Kst	159 bar.m/s
St class	1 Weak explosion.
Minimum Ignition Energy (MIE) - dust cloud	190 mJ
Explosive properties	Not explosive.

Oxidising properties Not oxidising.

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Moisture. Contact with incompatible materials. Keep away from heat, sparks and open flame. Minimise dust generation and accumulation. Dust may form explosive mixture with air. Fine particles (such as dust and mists) may fuel fires/explosions.
Incompatible materials	Strong oxidising agents.
Hazardous decomposition products	Carbon dioxide, carbon monoxide, and oxides of nitrogen. May include hydrogen chloride.

11. Toxicological information

Information on possible routes of exposure

Inhalation	Prolonged inhalation may be harmful.
Skin contact	May cause an allergic skin reaction.
Ractopamine Hydrochloride	Species: Rabbit Severity: Non-irritating

Eye contact	Causes serious eye irritation.
Ractopamine Hydrochloride	Species: Rabbit Severity: Irritant

Ingestion May be harmful if swallowed.

Symptoms related to exposure Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Dusts may irritate the respiratory tract, skin and eyes. May cause an allergic skin reaction. Dermatitis. Rash.

Acute toxicity May cause an allergic skin reaction.

Product	Species	Test Results
Engain 20 Ractopamine Hydrochloride Premix (70005)		
Acute		
Inhalation		
LC50	Rat	> 20 mg/l/4h (Calculated ATE)
Oral		
LD50	Rat	4000 mg/kg (Calculated ATE)
Components	Species	Test Results
Ractopamine Hydrochloride (CAS 90274-24-1)		
Acute		
Dermal		
LD50	Rabbit	> 2000 mg/kg
Inhalation		
LC50	Rat	2.8 mg/l, 4 hours
Oral		
LD50	Rat	367 - 474 mg/kg
Chronic		
Oral		
NOAEL	Monkey	0.125 mg/kg/day, 1 years [Target organ(s): Heart]
	Rat	60 mg/kg/day, 2 years [Uterine leiomyomas] 2 mg/kg/day, 2 years [Target organ(s): Heart]

Skin corrosion/irritation	Prolonged skin contact may cause temporary irritation.	
Corrosivity		
Ractopamine Hydrochloride		Species: Rabbit Severity: Non-irritant
Serious eye damage/irritation	Causes serious eye irritation.	
Eye contact		
Ractopamine Hydrochloride		Species: Rabbit Severity: Irritant
Respiratory or skin sensitisation		
Respiratory sensitisation	Not a respiratory sensitiser.	
Skin sensitisation	May cause an allergic skin reaction.	
Skin Sensitisation		
Ractopamine Hydrochloride		Species: Guinea Pig Severity: positive
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.	
Mutagenicity		
Ractopamine Hydrochloride		In Vitro Bacterial Mutagenicity (Ames) Result: Negative Species: Salmonella
		In Vitro Chromosomal Aberration, [CHO cells] Result: Negative
		In Vitro Chromosomal Aberration, [Human lymphocytes] Result: positive
		In Vitro Mammalian Cell Mutagenicity Result: Mixed [negative and positive results] Species: Mouse Lymphoma
		In Vivo Chromosomal Aberration Result: Negative Species: Mouse
		In Vivo Micronucleus Result: Equivocal Species: Rat
		In Vivo Micronucleus Result: Negative Species: Mouse
		In Vivo Sister Chromatid Exchange Result: Negative Species: Hamster
Carcinogenicity	Due to partial or complete lack of data the classification is not possible.	
Reproductive toxicity	Based on available data, the classification criteria are not met. This product is not expected to cause reproductive or developmental effects.	
Reproductivity		
Ractopamine Hydrochloride		15 mg/kg/day 2 Generation Reproductive Toxicity, (Fetotoxicity, Postnatal mortality, Maternal toxicity) Result: NOAEL Species: Rat Organ: Oral
Specific target organ toxicity - single exposure	Not classified.	

Specific target organ toxicity - repeated exposure May cause damage to organs (cardiovascular system) through prolonged or repeated exposure.

Aspiration hazard Not an aspiration hazard.

Chronic effects May cause damage to organs through prolonged or repeated exposure.

12. Ecological information

Ecotoxicity The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment. Avoid release to the environment.

Components		Species	Test Results
Ractopamine Hydrochloride (CAS 90274-24-1)			
	EC50	Activated sludge	1413 mg/l
	LD50	Colinus virginianus (Bobwhite Quail)	> 20 mg/kg, 14 Days
Aquatic			
Algae	EC50	Green algae (Selenastrum capricornutum)	> 101.2 mg/l, 72 Hours
Crustacea	EC50	Daphnia magna (Water Flea)	34.5 mg/l, 48 Hours
Fish	LC50	Lepomis macrochirus (Bluegill Sunfish)	544 mg/l, 96 Hours
		Oncorhynchus mykiss (rainbow trout)	693 mg/l, 96 Hours
Persistence and degradability	No data is available on the degradability of this product.		
Bioaccumulative potential	See below		
Partition coefficient n-octanol / water (log Kow)			
Ractopamine Hydrochloride	1.02, @ pH 7		

Mobility in soil No data available for this product.

Other adverse effects No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal methods Avoid release to the environment. Do not discharge into drains, water courses or onto the ground. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Considering the relevant known environmental and human health hazards of the material, review and implement appropriate technical and procedural waste water and waste disposal measures to prevent occupational exposure and environmental release. It is recommended that waste minimization be practiced. The best available technology should be utilized to prevent environmental releases. This may include destructive techniques for waste and wastewater. Dispose of contents/container in accordance with local/regional/national/international regulations.

Residual waste Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner.

Contaminated packaging Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport information

ADG

Not regulated as dangerous goods.

RID

Not regulated as dangerous goods.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable.

15. Regulatory information

Safety, health and environmental regulations

National regulations

This Safety Data Sheet was prepared in accordance with Australia Model Code of Practice for the preparation of Safety Data Sheets for Hazardous Chemicals.

APVMA No. 70005

Poison Schedule (Product) – Schedule 5

Australia Medicines & Poisons Appendix A

Poisons schedule number not allocated.

Australia Medicines & Poisons Appendix B

Poisons schedule number not allocated.

Australia Medicines & Poisons Appendix D

Poisons schedule number not allocated.

Australia Medicines & Poisons Appendix E

Poisons schedule number not allocated.

Australia Medicines & Poisons Appendix F

Poisons schedule number not allocated.

Australia Medicines & Poisons Appendix G

Poisons schedule number not allocated.

Australia Medicines & Poisons Appendix H

Poisons schedule number not allocated.

Australia Medicines & Poisons Appendix I

Poisons schedule number not allocated.

Australia Medicines & Poisons Appendix J

Poisons schedule number not allocated.

Australia Medicines & Poisons Appendix K

Poisons schedule number not allocated.

Australia Medicines & Poisons Schedule 10

Poisons schedule number not allocated.

Australia Medicines & Poisons Schedule 2

Poisons schedule number not allocated.

Australia Medicines & Poisons Schedule 3

Poisons schedule number not allocated.

Australia Medicines & Poisons Schedule 4

Poisons schedule number not allocated.

Australia Medicines & Poisons Schedule 5

Poisons schedule number not allocated.

Australia Medicines & Poisons Schedule 6

Poisons schedule number not allocated.

Australia Medicines & Poisons Schedule 7

Poisons schedule number not allocated.

Australia Medicines & Poisons Schedule 8

Poisons schedule number not allocated.

Australia Medicines & Poisons Schedule 9

Poisons schedule number not allocated.

High Volume Industrial Chemicals (HVIC)

Not listed.

Importation of Ozone Depleting Substances (Customs(Prohibited imports) Regulations 1956, Schedule 10)

Not listed.

National Pollutant Inventory (NPI) substance reporting list

Not listed.

Prohibited Carcinogenic Substances

Not regulated.

Prohibited Substances (National Model Regulation for the control of Workplace Hazardous Substances, Schedule 2 NOHSC:1005 (1994) as amended)

Not listed.

Restricted Importation of Organochlorine Chemicals (Customs(Prohibited Imports) Regulations 1956, Schedule 9)

Not listed.

Restricted Carcinogenic Substances

Not regulated.

International regulations**Stockholm Convention**

Not applicable.

Rotterdam Convention

Not applicable.

Kyoto Protocol

Not applicable.

Montreal Protocol

Not applicable.

Basel Convention

Not applicable.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Industrial Chemicals (AICIS)	No
Canada	Domestic Substances List (DSL)	No
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	No
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	No
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	No
New Zealand	New Zealand Inventory	No
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	No
Taiwan	Taiwan Chemical Substance Inventory (TCSI)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	No

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information

Issue date 24-October-2016

Revision date 04-August-2022

Key abbreviations or acronyms used ATE: Acute Toxicity Estimate according to REGULATION (EC) No 1272/2008 (CLP).

Disclaimer Zoetis Inc. believes that the information contained in this Safety Data Sheet is accurate, and while it is provided in good faith, it is without warranty of any kind, expressed or implied. If data for a hazard are not included in this document there is no known information at this time. The information in the sheet was written based on the best knowledge and experience currently available.

Revision information This document has undergone significant changes and should be reviewed in its entire

