SAFETY DATA SHEET



1. Identification

Product identifier	ER BAC PLUS®
Other means of identification	
Synonyms	ER BAC PLUS * ER Bac® Plus * Erysipelothrix Rhusiopathiae Bacterin
Recommended use	Veterinary vaccine
Recommended restrictions	Not for human use
Manufacturer/Importer/Supplier/I	Distributor information
Company Name (US)	Zoetis Inc.
	10 Sylvan Way
	Parsippany, New Jersey 07054 (USA)
Rocky Mountain Poison	1-866-531-8896
and Drug Center Product Support/Technical	1-800-366-5288
Services	
Emergency telephone	CHEMTREC (24 hours): 1-800-424-9300
numbers	International CLIEMTREC (24 hours), 1 702 E07 2007
Company Name (EU)	International CHEMTREC (24 hours): +1-703-527-3887 Zoetis Belgium S.A.
Company Name (EU)	Mercuriusstraat 20
	1930 Zaventem
	Belgium
Emergency telephone	International CHEMTREC (24 hours): +1-703-527-3887
number	
Contact E-Mail	VMIPSrecords@zoetis.com
2. Hazard(s) identification	
Physical hazards	Not classified.
Health hazards	Not classified.
Environmental hazards	Not classified.
OSHA defined hazards	Not classified.
Label elements	
Hazard symbol	None.
Signal word	None.
Hazard statement	The mixture does not meet the criteria for classification.
Precautionary statement	
Prevention	Observe good industrial hygiene practices.
Response	Wash hands after handling.
Storage	Store away from incompatible materials.
Disposal	Dispose of waste and residues in accordance with local authority requirements.
Hazard(s) not otherwise classified (HNOC)	None known.
Supplemental information	Direct contact with eyes may cause temporary irritation. In the event of accidental injection, an allergic reaction may occur. This product is an oil-adjuvanted suspension. Oil-adjuvant containing products may cause severe vasospasm following accidental injection.

3. Composition/information on ingredients

Mixtures

Chemical name	Common name and synonyms	CAS number	%
Water, purified		7732-18-5	90

Material name: ER BAC PLUS®

Chemical name	Common name and synonyms	CAS number	%
Aluminum hydroxide gel		21645-51-2	<10
Amphigen (Mineral oil / Soy lec	ithin)	8042-47-5	5
Formaldehyde		50-00-0	<0.1
Erysipelothrix rhusiopathiae		NOT ASSIGNED	*
Merthiolate (as mercury)		54-64-8	##
Composition comments	## Trace * Non-hazardous Ingredients In accordance with 29 CFR 1910.1200, the ex withheld as a trade secret.	xact percentage composition of	this mixture has bee
4. First-aid measures			
nhalation	Move to fresh air. Call a physician if symptom	ns develop or persist.	
Skin contact	In the case of skin contact, immediately wash of accidental self injection or needle stick inju water. Get medical attention immediately.	the skin with plenty of soap and	
Eye contact	Rinse thoroughly with plenty of water for at le contact lenses, if present and easy to do.	ast 15 minutes and consult a ph	ysician. Remove
ngestion	Rinse mouth. Call a physician or poison contrinstruction of medical personnel. Never give a	rol center immediately. Only inde anything by mouth to an uncons	uce vomiting at the cious person.
Most important symptoms/effects, acute and delayed	Direct contact with eyes may cause temporar redness, or discomfort. In the event of accide and symptoms might include skin rash, itchin characterized by rhinitis, sneezing, scratchy t edema, coughing, shortness of breath, whee with acute exposures in sensitized patients.	ntal injection, an allergic reactio g, redness or swelling. Respirat hroat, oral mucosal edema, lary	n may occur. Signs ory reactions may be ngeal mucosal
ndication of immediate medical attention and special treatment needed	Treat symptomatically. Where parenteral oil-a patient should be promptly evaluated for the o syndrome.		
General information	For personal protection, see section 8 of the SDS. Ensure that medical personnel are aware of material(s) involved, and take precautions to protect themselves.		
5. Fire-fighting measures			
Suitable extinguishing media	Water fog. Foam. Dry chemical powder. Carb	oon dioxide (CO2).	
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as th		
Specific hazards arising from the chemical	During fire, gases hazardous to health may b	e formed.	
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full p	rotective clothing must be worn	in case of fire.
Fire fighting equipment/instructions	Use water spray to cool unopened containers).	
Specific methods	Use standard firefighting procedures and con	sider the hazards of other involv	ed materials.
General fire hazards	No unusual fire or explosion hazards noted.		
6. Accidental release meas	sures		
Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. For personnel away.	onal protection, see section 8 of	the SDS.
Methods and materials for containment and cleaning up	Large Spills: Stop the flow of material, if this i spreading. Absorb in vermiculite, dry sand or recovery, flush area with water.		
	Small Spills: Wipe up with absorbent materia remove residual contamination.	l (e.g. cloth, fleece). Clean surfa	ce thoroughly to
Environmental precautions	Never return spills to original containers for re Avoid discharge into drains, water courses or	•	ection 13 of the SDS

7. Handling and storage Precautions for safe handling

Avoid contact with eyes, skin, and clothing. Avoid breathing mist or vapor. Avoid accidental injection. Wash thoroughly after handling. When using, do not eat, drink or smoke. Wear personal protective equipment. Avoid release to the environment. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities

Store away from direct sunlight. @ 2 - 7°C (36 - 45°F). Do not freeze. Store in original tightly closed container. Keep away from heat, sparks and open flame. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Components	Туре	Value	
Formaldehyde (CAS 50-00-0)	STEL	2 ppm	
,	TWA	0.75 ppm	
US. OSHA Table Z-1 Limits for Air Co	. ,		-
Components	Туре	Value	Form
Amphigen (Mineral oil / Soy lecithin) (CAS 8042-47-5) US. OSHA Table Z-2 (29 CFR 1910.10	PEL 00)	5 mg/m3	Mist.
Components	Туре	Value	
Merthiolate (as mercury) (CAS 54-64-8)	Ceiling	0.04 mg/m3	
	TWA	0.01 mg/m3	
US. OSHA Table Z-3 (29 CFR 1910.10	-		F a 1110
Components	Туре	Value	Form
Aluminum hydroxide gel (CAS 21645-51-2)	TWA	5 mg/m3	Respirable fraction.
		15 mg/m3	Total dust.
		50 mppcf	Total dust.
		15 mppcf	Respirable fraction.
US. ACGIH Threshold Limit Values			
Components	Туре	Value	Form
Aluminum hydroxide gel (CAS 21645-51-2)	TWA	1 mg/m3	Respirable fraction.
Amphigen (Mineral oil / Soy lecithin) (CAS 8042-47-5)	TWA	5 mg/m3	Inhalable fraction.
Formaldehyde (CAS 50-00-0)	Ceiling	0.3 ppm	
Merthiolate (as mercury) (CAS 54-64-8)	STEL	0.03 mg/m3	
	TWA	0.01 mg/m3	
US. NIOSH: Pocket Guide to Chemica			-
Components	Туре	Value	Form
Amphigen (Mineral oil / Soy Iecithin) (CAS 8042-47-5)	STEL	10 mg/m3	Mist.
	TWA	5 mg/m3	Mist.
Formaldehyde (CAS 50-00-0)	Ceiling	0.1 ppm	
	TWA	0.016 ppm	
Merthiolate (as mercury)	STEL	0.03 mg/m3	
(CAS 54-64-8)	TWA	0.01 mg/m3	
(CAS 54-64-8)	TWA ogical exposure limits noted for the in	-	
(CAS 54-64-8)		-	
(CAS 54-64-8) ogical limit values No biolo	ogical exposure limits noted for the in	-	

US - Tennessee OELs: Skin	designation	
Merthiolate (as mercury) US ACGIH Threshold Limit	. ,	Can be absorbed through the skin.
Merthiolate (as mercury)		Can be absorbed through the skin.
US NIOSH Pocket Guide to	Chemical Hazards: Skin desig	Ination
Merthiolate (as mercury)	(CAS 54-64-8)	Can be absorbed through the skin.
Control banding approach	Not available.	
Appropriate engineering controls	should be matched to condition or other engineering controls exposure limits have not beer	cally 10 air changes per hour) should be used. Ventilation rates ons. If applicable, use process enclosures, local exhaust ventilation, to maintain airborne levels below recommended exposure limits. If n established, maintain airborne levels to an acceptable level. Keep w the exposure limits or within the OEB range listed above in this ormally adequate.
Individual protection measures	, such as personal protective	equipment
Eye/face protection	If contact is likely, safety glass	ses with side shields are recommended.
Skin protection		
Hand protection	Wear impervious gloves if ski	n contact is possible.
Other	Wear suitable protective cloth coveralls, etc.) in both produc	ing. Use protective clothing (uniforms, lab coats, disposable tion and laboratory areas.
Respiratory protection	wear suitable respiratory equi concentrations below recomm	ctive equipment normally required. In case of insufficient ventilation, pment. If engineering controls do not maintain airborne nended exposure limits (where applicable) or to an acceptable level limits have not been established), an approved respirator must be
Thermal hazards	Not applicable.	
General hygiene considerations		al hygiene measures, such as washing after handling the material nd/or smoking. Routinely wash work clothing and protective inants.

9. Physical and chemical properties

Appearance	
Physical state	Liquid.
Form	Liquid.
Color	Cloudy white
Odor	Not available.
Odor threshold	Not available.
рН	6 - 8
Melting point/freezing point	Not available.
Initial boiling point and boiling	> 212 °F (> 100 °C)
Flash point	Non-flammable
Evaporation rate	Not available.
Flammability (solid, gas)	Not applicable.
Upper/lower flammability or expl	osive limits
Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	Not available.
Vapor 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 information	
Explosive properties	Not explosive.
Oxidizing properties	Not oxidizing.
Specific gravity	0.99
10. Stability and reactivity	y .

· · · · · · · · · · · · · · ·	3
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	Contact with incompatible materials. Sunlight. High temperatures. Store at 2-7°C. Prolonged exposure to higher temperatures may adversely affect potency. Do not freeze.
Incompatible materials	Strong oxidizing agents. This material can be denatured or inactivated by a variety of organic solvents, salts or heavy metals.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Inhalation	No adverse effects due to inhalation are expected.		
Skin contact Formaldehyde	Prolonged skin contact	may cause temporary irritation. Species: Rabbit Severity: Moderate to Severe	
Amphigen (Mineral oil / Soy	lecithin)	Species: Rabbit Severity: Non-irritating	
Eye contact Merthiolate (as mercury)	Direct contact with eyes may cause temporary irritation. Species: Rabbit Severity: Mild		
Amphigen (Mineral oil / Soy	lecithin)	Species: Rabbit Severity: Non-irritating	
Formaldehyde		Species: Rabbit Severity: Severe	
Ingestion	Expected to be a low ir	ngestion hazard.	
Symptoms related to the physical, chemical and toxicological characteristics	redness, or discomfort and symptoms might ir characterized by rhiniti	s may cause temporary irritation. Exposure may cause temporary irritation, In the event of accidental injection, an allergic reaction may occur. Signs include skin rash, itching, redness or swelling. Respiratory reactions may be s, sneezing, scratchy throat, oral mucosal edema, laryngeal mucosal tness of breath, wheezing, and chest pain. Asthma like reactions occur in sensitized patients.	
Information on toxicological ef	fects		
Acute toxicity	Expected to be a low h	azard for usual industrial or commercial handling by trained personnel.	
Components	Species	Test Results	
Aluminum hydroxide gel (CAS 21	645-51-2)		
<u>Acute</u>			
Acute			
Other LD50	Rat	150 mg/kg	

Components	Species	Test Results
Amphigen (Mineral oil / Soy lecit	hin) (CAS 8042-47-5)	
<u>Acute</u>		
Oral		
LD50	Rat	> 5000 mg/kg
<u>Chronic</u>		
Oral		
NOAEL	Rat	1800 mg/kg/day, 90 days Liver
ormaldehyde (CAS 50-00-0)		
<u>Acute</u>		
Dermal		
LD50	Rabbit	270 mg/kg
Inhalation		
LC50	Mouse	0.414 mg/L, 4 hours
	Rat	0.48 mg/L, 4 hours
Oral		
LD50	Rat	100 mg/kg
<u>Chronic</u>		
Inhalation		
LOAEL	Mouse	15 ppm, 2 years Tumors
	Rat	15 ppm, 90 days Respiratory system
		6 ppm, 2 years Tumors
Aarthialata (aa marauru) (CASE	4 64 9)	o ppin, 2 years runiors
Merthiolate (as mercury) (CAS 5	4-04-0)	
<u>Acute</u> Oral		
LD50	Rat	75 mg/kg
	Tiat	7 5 mg/kg
Subcutaneous LD50	Rat	98 mg/kg
Skin corrosion/irritation	-	may cause temporary irritation.
Serious eye damage/eye rritation	Direct contact with eye	s may cause temporary irritation.
Eye Contact Merthiolate (as mer	rcurv)	Species: Rabbit
		Severity: Mild
A 1.º /A.A		On a single Database
Amphigen (Mineral	oii / Soy lecithin)	Species: Rabbit Severity: Non-irritating
Formaldehyde		Species: Rabbit
		Severity: Severe
Respiratory or skin sensitization	n	
ACGIH sensitization		
FORMALDEHYDE (CAS	S 50-00-0)	Dermal sensitization
		Respiratory sensitization
Respiratory sensitization	Not a respiratory sensit	
Skin sensitization		ormaldehyde and merthiolate which are considered to be skin sensitizer
		ected to cause skin sensitization.
Skin sensitization		
Amphigen (Mineral	oil / Soy lecithin)	Species: Guinea Pig
		Severity: Negative
Formaldehyde		Species: Guinea Pig
,		Severity: Positive

Germ cell mutagenicity	No data available to indicate p mutagenic or genotoxic.	product or any components present at greater than 0.1% are
Mutagenicity Amphigen (Mineral o		In Vitro Bacterial Mutagenicity (Ames) Result: Negative Species: Salmonella
Formaldehyde		In Vitro Bacterial Mutagenicity (Ames) Result: Positive Species: Bacteria
		In Vitro Chromosome Aberration Result: Positive Species: Rodent
Amphigen (Mineral o	il / Soy lecithin)	In Vitro Mammalian Cell Mutagenicity Result: Negative Species: Mouse Lymphoma
Formaldehyde		In Vitro Sister Chromatid Exchange Result: Positive Species: Rodent
		In Vivo Chromosome Aberration Result: Positive Species: Not specified
Carcinogenicity	This product is not considered carcinogens are present at gr	to be a carcinogen by IARC, ACGIH, NTP, or OSHA. No known eater than 0.1%.
IARC Monographs. Overall I	Evaluation of Carcinogenicity	
Amphigen (Mineral oil / S Formaldehyde (CAS 50-0	oy lecithin) (CAS 8042-47-5)	3 Not classifiable as to carcinogenicity to humans. 1 Carcinogenic to humans.
Formaldehyde (CAS 50-0 US. National Toxicology Pro	ogram (NTP) Report on Carcin	Cancer ogens
Formaldehyde (CAS 50-0	00-0)	Known To Be Human Carcinogen.
Reproductive toxicity	This product is not expected t	o cause reproductive or developmental effects.
Developmental effects Formaldehyde		185 mg/kg/day Embryo / Fetal Development, Not teratogenic Maternal toxicity Species: Mouse Organ: Oral
		40 ppm Embryo / Fetal Development, Not Teratogenic Maternal Toxicity Species: Rat Organ: Inhalation
Specific target organ toxicity - single exposure	Not classified.	
Specific target organ toxicity - repeated exposure	Not classified.	
Aspiration hazard	Not an aspiration hazard.	
Further information	been prepared from killed or i	e. The antigens included in this product are non-infectious. All have nactivated preparations of microorganisms. This product is an il-adjuvant containing products may cause severe vasospasm
12. Ecological information	1	
Ecotoxicity	The product is not classified a	is environmentally hazardous. However, this does not exclude the nt spills can have a harmful or damaging effect on the environment. ent.

Components		Species	Test Results
Amphigen (Mineral oil / Soy	lecithin) (CAS 80	42-47-5)	
	LC50	Lepomis macrochirus (Bluegill Sunfish)	> 10000 mg/L, 96 Hours
Formaldehyde (CAS 50-00-0))		
	EC50	Daphnia magna (Water Flea)	42 mg/L, 24 Hours
	LC50	Oncorhynchus mykiss (Rainbow Trout)	118 ppm, 96 Hours
Aquatic			
Crustacea	EC50	Water flea (Daphnia pulex)	4.3 - 7.8 mg/l, 48 hours
Fish	LC50	Striped bass (Morone saxatilis)	10.302 - 16.743 mg/l, 96 hours
sistence and degradability	No data is ava	ailable on the degradability of this product.	
accumulative potential	No data available.		
bility in soil	No data available.		
ner 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.		
. Disposal consideratio	ons		
•			

Disposal instructions	Avoid release to the environment. Do not discharge into drains, water courses or onto the ground. 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. This product contains trace quantities of mercury and may qualify as a RCRA Hazardous Waste. Status should be confirmed using the EPA Toxicity Characteristic Leaching Procedure (TCLP). Dispose of contents/container in accordance with local/regional/national/international regulations.
Local disposal regulations	Dispose in accordance with all applicable regulations.
Hazardous waste code	None known. This product contains trace quantities of mercury, releases to the environment should be avoided.
Waste from residues / unused products	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 (see: Disposal instructions).
Contaminated packaging	Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT

Not regulated as dangerous goods.

ΙΑΤΑ

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

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

15. Regulatory information

US federal regulations This product is not known to be a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.	
CERCLA Hazardous Substance List (40 CFR	302.4)
Formaldehyde (CAS 50-00-0)	Listed.
SARA 304 Emergency release notification	
Formaldehyde (CAS 50-00-0)	100 LBS
OSHA Specifically Regulated Substances (29) CFR 1910.1001-1050)
Formaldehyde (CAS 50-00-0)	Cancer Skin sensitization

Respiratory sensitization Eye irritation Skin irritation respiratory tract irritation Acute toxicity Flammability

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories	Immediate Hazard - No
	Delayed Hazard - No
	Fire Hazard - No
	Pressure Hazard - No
	Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Chemical name	CAS number	Reportable quantity (pounds)	Threshold planning quantity (pounds)	Threshold planning quantity, lower value (pounds)	Threshold planning quantity, upper value (pounds)
Formaldehyde	50-00-0	100	500		
SARA 311/312 Hazardous chemical	s No				
SARA 313 (TRI reporting) Not regulated.)				
her federal regulations					
Clean Air Act (CAA) Sect	ion 112 Hazardo	ous Air Polluta	nts (HAPs) List		
Formaldehyde (CAS 5 Merthiolate (as mercu Clean Air Act (CAA) Sect Formaldehyde (CAS 5	ry) (CAS 54-64-8 ion 112(r) Accid	,	Prevention (40 CFR 6	8.130)	
Safe Drinking Water Act (SDWA)	Not regulate	ed.			
state regulations		WARNING: This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm.			
US - California Propo	osition 65 - CRT	: Listed date/C	arcinogenic substanc	e	
Formaldehyde (C US - California Propo		: Listed date/D	Listed: January 1, evelopmental toxin	1988	
Merthiolate (as m US. California. Cand subd. (a))			Listed: July 1, 199 nsumer Products Reg		legs, tit. 22, 69502.3,
Formaldehyde (C	AS 50-00-0)				
ernational Inventories					
Country(s) or region	Inventory r	ame			On inventory (yes/no)*
Australia	Australian I	nventory of Che	emical Substances (AIC	S)	No
Canada	Domestic S	ubstances List	(DSL)		No
Canada	Non-Domes	stic Substances	List (NDSL)		No
China	Inventory of	Existing Chem	ical Substances in Chir	na (IECSC)	Nc
Europe	European lı Substances		ting Commercial Chem	ical	Nc
Europe	European L	ist of Notified C	hemical Substances (E	LINCS)	Nc
Japan	Inventory of	Existing and N	lew Chemical Substanc	es (ENCS)	No
Korea	Existing Ch	emicals List (E0	CL)		No
New Zealand	New Zealar	nd Inventory			No
Philippines	Philippine Iı (PICCS)	nventory of Che	micals and Chemical S	Substances	No
United States & Puerto Rid		ances Control	Act (TSCA) Inventory		Nc

*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, including date of preparation or last revision

Issue date Version #	04-06-2017 01
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 entirety.