1. Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Trade name	:	**B 1473**
Other means of Identification	:	**Liquid Barium Zinc Compound**

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

Use of the Substance/Mixture	:	Manufacture of plastics products Polymer additive Stabilizer
Restrictions on Use	:	None known

1.3 Details of the supplier of the safety data sheet

Company	:	Baerlocher Production USA LLC 5890 Highland Ridge Drive Cincinnati, OH 45232
Telephone	:	Day 330-602-1528, 330-602-1531 or -1530
	:	Night 513-207-1620 or 513-604-2327
E-mail address	:	Hotline.PS@baerlocher.com
Responsible/issuing person	:	Product Safety Department

1.4 Emergency telephone number (0 - 24 h)

Tel.: 800-424-9300 USA or 703-527-3887

2. Hazards identification

2.1 Classification of the substance or mixture

Skin irritation, Category 2	H315: Causes skin irritation.
Skin sensitisation, Category 1	H317: May cause an allergic skin reaction.
Reproductive toxicity, Category 1B	H360F: May damage fertility.
Specific target organ toxicity - repeated exposure, Category 1	H372: Causes damage to organs through prolonged or repeated exposure.
Aspiration hazard, Category 1	H304: May be fatal if swallowed and enters airways.
Chronic aquatic toxicity, Category 2	H411: Toxic to aquatic life with long lasting effects.

Toxic	R48/23/24/25: Toxic: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed.
Toxic to Reproduction Category 2	R60: May impair fertility.
Harmful	R65: Harmful: may cause lung damage if swallowed. R20/22: Harmful by inhalation and if swallowed.
Sensitising	R43: May cause sensitisation by skin contact.
Dangerous for the environment	R51/53: Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic

environment.

Dangerous for the environment :

2.2 Label elements

Hazard pictograms :

Signal word : Danger

Hazard statements :		
	H304	May be fatal if swallowed and enters airways.
	H315	Causes skin irritation.
	H317	May cause an allergic skin reaction.
	H360F	May damage fertility.
	H372	Causes damage to organs through prolonged or repeated exposure.
	H411	Toxic to aquatic life with long lasting effects.

Precautionary statements :		
	Prevention:	
	P201	Obtain special instructions before use.
	P260	Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
	P280	Wear protective gloves.
	P281	Use personal protective equipment as required.
	Response:	
	P301 + P310	IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician.
	P308 + P313	IF exposed or concerned: Get medical advice/ attention.
	P331	Do NOT induce vomiting.

2.3 Other hazards

The product is combustible.
May produce an allergic reaction.

3. Composition/information on ingredients

3.2 Mixtures

Chemical nature : Preparation contains barium- and zinc carboxylates in organic solvent.

Hazardous components

Chemical Name	CAS-No.	Concentration [%]
Barium compounds	Trade Secret*	< 25*
Zinc compounds	Trade Secret*	< 25*
Diisodecyl phenyl phosphite	25550-98-5	>= 20*
2-(2-Butoxyethoxy) ethanol	112-34-5	< 10*
Distillates (petroleum), hydrotreated light	64742-47-8	< 20*
Diphenyl phosphite	4712-55-4	< 10*
Isodecyl diphenyl phosphite	26544-23-0	< 20*
Triisodecyl phosphite	25448-25-3	< 10*

*Trade Secret – The specific chemical identity and/or exact percentage of composition has been withheld as a trade secret.

4. First aid measures

4.1 Description of first aid measures

General advice : Remove and wash contaminated clothing before re-use.

If inhaled : Move to fresh air.

In case of skin contact : Wash off with soap and plenty of water.
Take off contaminated clothing and shoes immediately.

In case of eye contact : Rinse with plenty of water.

If swallowed : Consult a doctor and show this safety datasheet.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms : No information available.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment : Treat symptomatically.

5. Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media : Water spray
Foam
Carbon dioxide (CO2)
Dry chemical
Sand

Unsuitable extinguishing media : High volume water jet

5.2 Special hazards arising from the substance or mixture

Specific hazards during firefighting	:	Smoke and fumes, toxic.

5.3 Advice for firefighters

Special protective equipment for firefighters	:	In the event of fire, wear self-contained breathing apparatus.
Further information	:	Release of Phenol by hydrolysis.

6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions	:	Remove all sources of ignition. Ensure adequate ventilation. Avoid contact with skin and eyes. Use personal protective equipment.

6.2 Environmental precautions

Environmental precautions	:	Do not flush into surface water or sanitary sewer system. Avoid subsoil penetration.

6.3 Methods and materials for containment and cleaning up

Methods for 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.

6.4 Reference to other sections

For personal protection see section 8.

7. Handling and storage

7.1 Precautions for safe handling

Advice on safe handling	:	Take precautionary measures against static discharges. Keep away from sources of ignition - No smoking. Provide sufficient air exchange and/or exhaust in work rooms.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers	:	Store at room temperature in the original container. Keep container tightly closed in a dry and well-ventilated place.
Further information on storage conditions	:	Handle in accordance with good industrial hygiene and safety practice.
German storage class	:	10 Combustible liquids

7.3 Specific end use(s)

: Consult the technical guidelines for the use of this substance/mixture.

8. Exposure controls/personal protection

8.1 Control parameters

Substance	CAS No.	Regulatory Limits			Recommended Limits	
		OSHA PEL		Cal/OSHA PEL	NIOSH REL	ACGIH TLV
		ppm	mg/m³	8-hour TWA (ST) STEL (C) Ceiling	Up to 10-hour TWA (ST) STEL (C) Ceiling	8-hour TWA (ST) STEL (C) Ceiling
Barium, soluble compounds (as Ba)	7440-39-3		0.5	0.5 mg/m³	0.5 mg/m³	0.5 mg/m³
2-(2-butoxyethoxy) ethanol	112-34-5					10 ppm
Distillates (Petroleum), hydrotreated light	64742-47-8					200 mg/m³

8.2 Exposure controls

Engineering measures

Local exhaust

Personal protective equipment

Respiratory protection : In case of insufficient ventilation:
Protective mask against solvent vapours (A2 Filter)

Hand protection : protective gloves acc. to EN 374, e.g. neoprene, thickness: min. 0,7 mm

Eye protection : Safety glasses

Skin and body protection : Long sleeved clothing
Rubber apron

Hygiene measures : When using do not eat or drink.
Do not smoke.

Wash hands before breaks and at the end of workday.
Shower or bathe at the end of working.
Keep working clothes separately.

Protective measures : antistatic shoes

Environmental exposure controls

General advice : Do not flush into surface water or sanitary sewer system.
Avoid subsoil penetration.

9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance	:	liquid
Colour	:	yellowish
Odour	:	characteristic
pH	:	no data available
Boiling point/boiling range	:	237 - 277 °C, Value refers to the solvent.
Flash point	:	> 100 °C
Lower explosion limit	:	ca. 0,5 %(V), 25 °C, Value refers to the solvent.
Upper explosion limit	:	ca. 4,6 %(V), 25 °C, Value refers to the solvent.
Vapour pressure	:	0,03 hPa, 20 °C, Value refers to the solvent.
Density	:	0,8 - 1,0 g/cm3
Water solubility	:	slightly soluble
Partition coefficient: n-octanol/water	:	no data available
Auto-ignition temperature	:	ca. 243 °C, Value refers to the solvent.
Ignition temperature	:	no data available
Viscosity, dynamic	:	no data available
Viscosity, kinematic	:	no data available
Odor Threshold	:	No data available
Melting/Freezing Point	:	No data available
Evaporation Rate	:	No data available
Flammability	:	No data available
Vapor Density	:	No data available
Decomposition Temperature	:	No data available

9.2 Other information

No data available

10. Stability and reactivity

10.1 Reactivity

Stable at normal ambient temperature and pressure.

10.2 Chemical stability

No decomposition if stored normally.

10.3 Possibility of hazardous reactions

Hazardous reactions	:	Vapours may form explosive mixture with air.

10.4 Conditions to avoid

Conditions to avoid	:	Sources of ignition

10.5 Incompatible materials

Materials to avoid	:	Strong oxidizing agents

10.6 Hazardous decomposition products

Hazardous decomposition products	:	No decomposition if used as directed.

11. Toxicological information

11.1 Information on toxicological effects

Product

Acute oral toxicity	:	Acute toxicity estimate: > 2.000 mg/kg, Calculation method
Acute inhalation toxicity	:	Acute toxicity estimate: > 20 mg/l, 4 h, vapour, Calculation method
Acute dermal toxicity	:	Acute toxicity estimate: > 2.000 mg/kg, Calculation method

Components:

Barium compounds :

Acute oral toxicity	:	Classification, Labelling according to EC Directives, Regulation (EC) No 1272/2008, Annex VI, Table 3.1, Acute oral toxicity, Category 4
Acute inhalation toxicity	:	Classification, Labelling according to EC Directives, Regulation (EC) No 1272/2008, Annex VI, Table 3.1, Acute inhalation toxicity, Category 4
Further information	:	CMR effects, Carcinogenicity, Mutagenicity, Reproductive toxicity, Hazard assessment, Category 1A, Category 1B, Not classified due to lack of data.

	:	Likely route of exposure, Inhalation, Ingestion, Skin contact
Barium compounds :		
Acute oral toxicity	:	Read-across (Analogy)
	:	Classification, Labelling according to EC Directives, Regulation (EC) No 1272/2008, Annex VI, Table 3.1, Acute oral toxicity, Category 4
Acute inhalation toxicity	:	Read-across (Analogy)
	:	Classification, Labelling according to EC Directives, Regulation (EC) No 1272/2008, Annex VI, Table 3.1, Acute inhalation toxicity, Category 4
Acute dermal toxicity	:	Read-across (Analogy)
	:	Based on available data, the classification criteria are not met.
Skin corrosion/irritation	:	Not classified due to lack of data.
Serious eye damage/eye irritation	:	Not classified due to lack of data.
Respiratory or skin sensitisation	:	Read-across (Analogy)
	:	Based on available data, the classification criteria are not met.
Germ cell mutagenicity		
Genotoxicity in vitro	:	Read-across (Analogy)
	:	Based on available data, the classification criteria are not met.
Carcinogenicity	:	Read-across (Analogy)
	:	Based on available data, the classification criteria are not met.
Reproductive toxicity	:	
	:	Classification
	:	Labelling according to EC Directives
	:	Regulation (EC) No 1272/2008, Annex VI, Table 3.1
	:	May damage fertility.
STOT - single exposure	:	Remarks: Read-across (Analogy)
	:	Remarks: Based on available data, the classification criteria are not met.
STOT - repeated exposure	:	Read-across (Analogy)
STOT - repeated exposure	:	Classification, Labelling according to EC Directives, Regulation (EC) No 1272/2008, Annex VI, Table 3.1, Specific target organ toxicity - repeated exposure, Category 1
Aspiration toxicity	:	Not classified due to lack of data.

Further information	:	CMR effects, Carcinogenicity, Mutagenicity, Hazard assessment, Category 1A, Category 1B, Based on available data, the classification criteria are not met.
	:	CMR effects, Reproductive toxicity, Read-across (Analogy), Category 1B
	:	Likely route of exposure, Ingestion, Inhalation, Skin contact

Diisodecyl phenyl phosphite :

Acute oral toxicity	:	LD50: > 5.000 mg/kg, rat, OECD Test Guideline 401, GLP: no, Based on available data, the classification criteria are not met.
Acute inhalation toxicity	:	LC50: > 11,7 mg/l, 1 h, rat, dust/mist, OECD Test Guideline 403, GLP: yes, Based on available data, the classification criteria are not met.
Acute dermal toxicity	:	LD50: > 2.000 mg/kg, rabbit, OECD Test Guideline 402, GLP: yes, Based on available data, the classification criteria are not met.
Skin corrosion/irritation	:	rabbit, Result: slight irritation, OECD Test Guideline 404, GLP: yes, Based on available data, the classification criteria are not met.
Serious eye damage/eye irritation	:	rabbit, Result: not irritating, OECD Test Guideline 405, GLP: no, Based on available data, the classification criteria are not met.
Respiratory or skin sensitisation	:	Skin sensitisation
	:	LLNA, mouse, Result: Sensitising, OECD Test Guideline 429, GLP: yes
	:	Respiratory sensitisation, Based on available data, the classification criteria are not met.
Germ cell mutagenicity		
Genotoxicity in vitro	:	Mutagenicity (Salmonella typhimurium - reverse mutation assay), Bacteria, Result: negative, OECD Test Guideline 471, GLP: yes
	:	DNA repair-suspension assay, Bacteria, Result: negative, standardised international/national methodology, GLP: yes, Based on available data, the classification criteria are not met.
Genotoxicity in vivo	:	In vivo micronucleus test, mouse, Oral, OECD Test Guideline 474, GLP: yes, Result: negative, Based on available data, the classification criteria are not met.
Carcinogenicity	:	Based on available data, the classification criteria are not met.
Reproductive toxicity	:	Read-across (Analogy)
	:	Screening for reproductive/developmental toxicity, rat, Oral,

		Test period: 8 weeks, NOAEL: 1.000 mg/kg, OECD Test Guideline 422, GLP: yes, Based on available data, the classification criteria are not met.
Teratogenicity	:	Read-across (Analogy)
	:	rat, Oral, NOAEL: 1.000 mg/kg, OECD Test Guideline 422, GLP: yes, Based on available data, the classification criteria are not met.
STOT - single exposure	:	Remarks: Based on available data, the classification criteria are not met.
STOT - repeated exposure	:	Read-across (Analogy)
STOT - repeated exposure	:	rat, Oral, NOAEL: 1.000 mg/kg, OECD Test Guideline 422, GLP: yes, Based on available data, the classification criteria are not met.
Aspiration toxicity	:	Based on available data, the classification criteria are not met.
Further information	:	CMR effects, Carcinogenicity, Mutagenicity, Reproductive toxicity, Hazard assessment, Category 1A, Category 1B, Based on available data, the classification criteria are not met.
	:	Likely route of exposure, Inhalation, Ingestion, Skin contact

2-(2-Butoxyethoxy) ethanol :

Acute oral toxicity	:	LD50: 2.410 mg/kg, mouse(male), OECD Test Guideline 401, GLP: no, Based on available data, the classification criteria are not met.
Acute inhalation toxicity	:	LC50: > 0,35 mg/l, 4 h, rat, vapour, Expert judgement, > Saturated vapour concentration
	:	LC0: 0,35 mg/l, 14 d, rat, vapour, OECD Test Guideline 412, GLP: yes, > Saturated vapour concentration
	:	LC50: > 29 ppm, 2 h, rat, vapour, OECD Test Guideline 403, GLP: no, Based on available data, the classification criteria are not met.
Acute dermal toxicity	:	LD50: 2.764 mg/kg, rabbit, OECD Test Guideline 402, GLP: no, Based on available data, the classification criteria are not met.
Skin corrosion/irritation	:	rabbit, Result: slight irritation, OECD Test Guideline 404, 1 h, GLP: no, Based on available data, the classification criteria are not met.
Serious eye damage/eye irritation	:	rabbit, Result: Moderate eye irritation, OECD Test Guideline 405, GLP: no
Respiratory or skin sensitisation	:	Skin sensitisation
	:	Maximisation Test, guinea pig, Result: not sensitising, OECD

		Test Guideline 406, Based on available data, the classification criteria are not met.
	:	Respiratory sensitisation, Not classified due to lack of data.
Germ cell mutagenicity		
Genotoxicity in vitro	:	Mutagenicity (Salmonella typhimurium - reverse mutation assay), Bacteria, Result: negative, OECD Test Guideline 471
	:	In vitro gene mutation study in mammalian cells, CHO, Result: negative, OECD Test Guideline 476, GLP: yes
	:	Mutagenicity (in vitro mammalian cytogenetic test), CHO, Result: negative, OECD Test Guideline 473, Based on available data, the classification criteria are not met.
Genotoxicity in vivo	:	Mutagenicity (in vivo mammalian bone-marrow cytogenetic test, chromosomal analysis), mouse, Oral, Single dose, OECD Test Guideline 475, Result: negative, Based on available data, the classification criteria are not met.
Carcinogenicity	:	Not classified due to lack of data.
Reproductive toxicity	:	One-generation reproduction toxicity test, rat, Skin contact, OECD Test Guideline 415
	:	One-generation reproduction toxicity test, rat, Oral, OECD Test Guideline 415, Based on available data, the classification criteria are not met.
Teratogenicity	:	rabbit, Skin contact, OECD Test Guideline 414
	:	rat, Oral, OECD Test Guideline 414, Based on available data, the classification criteria are not met.
STOT - single exposure	:	Remarks: Based on available data, the classification criteria are not met.
STOT - repeated exposure	:	rat, Oral, standardised international/national methodology, GLP: yes, Based on available data, the classification criteria are not met.
STOT - repeated exposure	:	rat, Dermal, standardised international/national methodology, Based on available data, the classification criteria are not met.
STOT - repeated exposure	:	rat, Inhalation, standardised international/national methodology, GLP: yes, Based on available data, the classification criteria are not met.
Aspiration toxicity	:	Not classified due to lack of data.
Further information	:	CMR effects, Carcinogenicity, Mutagenicity, Reproductive toxicity, Hazard assessment, Category 1A, Category 1B, Based on available data, the classification criteria are not met.
	:	Likely route of exposure, Inhalation, Ingestion, Skin contact

Distillates (petroleum), hydrotreated light :

Acute oral toxicity	:	LD50: > 5.000 mg/kg, rat, OECD Test Guideline 420, GLP: yes, Based on available data, the classification criteria are not met.
Acute inhalation toxicity	:	LC50: > 5,28 mg/l, 4 h, rat, vapour, OECD Test Guideline 403, GLP: yes, Based on available data, the classification criteria are not met.
Acute dermal toxicity	:	LD50: > 2.000 mg/kg, rabbit, OECD Test Guideline 402, GLP: yes, Based on available data, the classification criteria are not met.
Skin corrosion/irritation	:	rabbit, Result: irritating, standardised international/national methodology, 24 h, GLP: yes
Serious eye damage/eye irritation	:	rabbit, Result: not irritating, standardised international/national methodology, GLP: yes, Based on available data, the classification criteria are not met.
Respiratory or skin sensitisation	:	Skin sensitisation
	:	Buehler Test, guinea pig, Result: not sensitising, OECD Test Guideline 406, GLP: yes, Based on available data, the classification criteria are not met.
	:	Respiratory sensitisation
	:	Based on available data, the classification criteria are not met.
Germ cell mutagenicity		
Genotoxicity in vitro	:	Mutagenicity (Salmonella typhimurium - reverse mutation assay), Bacteria, Result: negative, OECD Test Guideline 471
	:	In vitro gene mutation study in mammalian cells, mouse lymphoma cells, Result: negative, OECD Test Guideline 476, GLP: yes, Based on available data, the classification criteria are not met.
Genotoxicity in vivo	:	Genotoxicity in vivo, rat, intraperitoneally, OECD Test Guideline 478, Result: negative
	:	Genotoxicity in vivo, mouse, intraperitoneally, OECD Test Guideline 478, Result: negative
	:	Genotoxicity in vivo, mouse, Inhalation, OECD Test Guideline 478, Result: negative
	:	Mutagenicity (in vivo mammalian bone-marrow cytogenetic test, chromosomal analysis), rat, intraperitoneally, OECD Test Guideline 475, GLP: yes, Based on available data, the classification criteria are not met.
Carcinogenicity	:	mouse, Skin contact, OECD Test Guideline 451, GLP: yes, Based on available data, the classification criteria are not met.
Reproductive toxicity	:	One-generation reproduction toxicity test, rat, Oral
	:	Screening for reproductive/developmental toxicity, rat, Skin contact, NOAEL: > 494 mg/kg, OECD Test Guideline 421,

		Based on available data, the classification criteria are not met.
Teratogenicity	:	rat, Inhalation, OECD Test Guideline 414
	:	rat, Oral, OECD Test Guideline 414, Based on available data, the classification criteria are not met.
STOT - single exposure	:	Assessment: May cause drowsiness or dizziness.
STOT - repeated exposure	:	rat, Oral, Exposure time: <= 90 d, Based on available data, the classification criteria are not met.
STOT - repeated exposure	:	rat / mouse, Inhalation, Exposure time: 90 d, OECD Test Guideline 413, Based on available data, the classification criteria are not met.
STOT - repeated exposure	:	rat, Dermal, Exposure time: 28 d, OECD Test Guideline 410, GLP: yes, Based on available data, the classification criteria are not met.
Aspiration toxicity	:	May be fatal if swallowed and enters airways.
Further information	:	CMR effects, Carcinogenicity, Mutagenicity, Reproductive toxicity, Hazard assessment, Category 1A, Category 1B, Based on available data, the classification criteria are not met.
	:	Likely route of exposure, Inhalation, Ingestion, Skin contact

Isodecyl diphenyl phosphite :

Acute oral toxicity	:	LD50: 3.840 mg/kg, rat, standardised international/national methodology, Based on available data, the classification criteria are not met.
Acute inhalation toxicity	:	LC50: > 8,4 mg/l, 1 h, rat, dust/mist, OECD Test Guideline 403, GLP: yes, Based on available data, the classification criteria are not met.
Acute dermal toxicity	:	LD50: > 5.000 mg/kg, rabbit, OECD Test Guideline 402, GLP: yes, Based on available data, the classification criteria are not met.
Skin corrosion/irritation	:	rabbit, Result: slight irritation, standardised international/national methodology, Based on available data, the classification criteria are not met.
Serious eye damage/eye irritation	:	rabbit, Result: Mild eye irritation, standardised international/national methodology, Based on available data, the classification criteria are not met.
Respiratory or skin sensitisation	:	Skin sensitisation
	:	Maximisation Test, guinea pig, Result: Sensitising, standardised international/national methodology
	:	Respiratory sensitisation, Based on available data, the classification criteria are not met.

Germ cell mutagenicity

Genotoxicity in vitro	:	Mutagenicity (Salmonella typhimurium - reverse mutation assay), Bacteria, Result: negative, OECD Test Guideline 471, GLP: yes
	:	DNA repair-suspension assay, Bacteria, Result: negative, standardised international/national methodology, GLP: yes, Based on available data, the classification criteria are not met.
Genotoxicity in vivo	:	In vivo micronucleus test, mouse, Oral, OECD Test Guideline 474, GLP: yes, Result: negative, Based on available data, the classification criteria are not met.
Carcinogenicity	:	Based on available data, the classification criteria are not met.
Reproductive toxicity	:	Screening for reproductive/developmental toxicity, rat, Exposure time: 16 w, Oral, NOAEL: 15 mg/kg, OECD Test Guideline 422, GLP: yes, Based on available data, the classification criteria are not met.
Teratogenicity	:	rat, Oral, NOAEL: 15 mg/kg, OECD Test Guideline 422, GLP: yes, Based on available data, the classification criteria are not met.
STOT - single exposure	:	Remarks: Based on available data, the classification criteria are not met.
STOT - repeated exposure	:	rat, Oral, Exposure time: 16 w, NOAEL: 15 mg/kg, OECD Test Guideline 422, GLP: yes, Based on available data, the classification criteria are not met.
Aspiration toxicity	:	Based on available data, the classification criteria are not met.
Further information	:	CMR effects, Carcinogenicity, Mutagenicity, Reproductive toxicity, Hazard assessment, Category 1A, Category 1B, Based on available data, the classification criteria are not met.
	:	Likely route of exposure, Inhalation, Ingestion, Skin contact

Triisodecyl phosphite :

Acute oral toxicity	:	LD50: 13.800 mg/kg, rat, OECD Test Guideline 401, Based on available data, the classification criteria are not met.
Acute inhalation toxicity	:	Read-across (Analogy)
	:	LC50: > 12,6 mg/l, 1 h, rat, dust/mist, OECD Test Guideline 403, GLP: yes, Based on available data, the classification criteria are not met.
Acute dermal toxicity	:	Read-across (Analogy)
	:	LD50: > 5.000 mg/kg, rabbit, OECD Test Guideline 402, GLP: yes, Based on available data, the classification criteria are not met.
Skin corrosion/irritation	:	rabbit, Result: slight irritation, standardised

		international/national methodology, 24 h, Based on available data, the classification criteria are not met.
Serious eye damage/eye irritation	:	rabbit, Result: not irritating, standardised international/national methodology, Based on available data, the classification criteria are not met.
Respiratory or skin sensitisation	:	LLNA, mouse, Result: Sensitising, OECD Test Guideline 429, GLP: yes
Germ cell mutagenicity		
Genotoxicity in vitro	:	Read-across (Analogy)
	:	Mutagenicity (Salmonella typhimurium - reverse mutation assay), Bacteria, Result: negative, OECD Test Guideline 471, GLP: yes
	:	Read-across (Analogy)
	:	DNA repair-suspension assay, Bacteria, Result: negative, standardised international/national methodology, GLP: yes, Based on available data, the classification criteria are not met.
Genotoxicity in vivo	:	Read-across (Analogy)
	:	In vivo micronucleus test, mouse, Oral, OECD Test Guideline 474, GLP: yes, Result: negative, Based on available data, the classification criteria are not met.
Carcinogenicity	:	Based on available data, the classification criteria are not met.
Reproductive toxicity	:	Screening for reproductive/developmental toxicity, rat, Oral, Test period: 8 weeks, NOAEL: 1.000 mg/kg, OECD Test Guideline 422, GLP: yes, Based on available data, the classification criteria are not met.
Teratogenicity	:	rat, Oral, NOAEL: 1.000 mg/kg, OECD Test Guideline 422, GLP: yes, Based on available data, the classification criteria are not met.
STOT - single exposure	:	Remarks: Based on available data, the classification criteria are not met.
STOT - repeated exposure	:	rat, Oral, NOAEL: 1.000 mg/kg, OECD Test Guideline 422, GLP: yes, Based on available data, the classification criteria are not met.
Aspiration toxicity	:	Based on available data, the classification criteria are not met.
Further information	:	CMR effects, Carcinogenicity, Mutagenicity, Reproductive toxicity, Hazard assessment, Category 1A, Category 1B, Based on available data, the classification criteria are not met.
	:	Likely route of exposure, Inhalation, Ingestion, Skin contact

11.2 Carcinogenicity

Contains no known or suspected carcinogens listed by IARC, NTP or OSHA at or above reportable quantities.

12. Ecological information

12.1 Toxicity

Components:

Barium compounds :

Ecotoxicology Assessment

Acute aquatic toxicity	:	Not classified due to lack of data.
Chronic aquatic toxicity	:	Not classified due to lack of data.

Barium compounds :

Ecotoxicology Assessment

Acute aquatic toxicity	:	Based on available data, the classification criteria are not met.
Chronic aquatic toxicity	:	Read-across (Analogy), Toxic to aquatic life with long lasting effects.

Diisodecyl phenyl phosphite :

Toxicity to fish	:	> 100 mg/l, 48 h, Leuciscus idus (Golden orfe), static test, OECD Test Guideline 203
Toxicity to daphnia and other aquatic invertebrates	:	EC50: 0,2 mg/l, 48 h, Daphnia magna (Water flea), static test, OECD Test Guideline 202, GLP: yes
Toxicity to algae	:	EC50: 45 mg/l, 72 h, Desmodesmus subspicatus (green algae), static test, OECD Test Guideline 201, GLP: yes

Ecotoxicology Assessment

Acute aquatic toxicity	:	Based on available data, the classification criteria are not met.
Chronic aquatic toxicity	:	Based on available data, the classification criteria are not met.

2-(2-Butoxyethoxy) ethanol :

Toxicity to fish	:	LC50: 1.300 mg/l, 96 h, Lepomis macrochirus (Bluegill sunfish), static test, OECD Test Guideline 203, GLP: no
Toxicity to daphnia and other aquatic invertebrates	:	NOEC: >= 100 mg/l, 48 h, Daphnia magna (Water flea), static test, OECD Test Guideline 202, GLP: yes
Toxicity to algae	:	NOEC: > 100 mg/l, 96 h, Desmodesmus subspicatus (green algae), static test, OECD Test Guideline 201, GLP: yes

Toxicity to bacteria	:	EC10: > 1.995 mg/l, 0,5 h, activated sludge, Respiration inhibition, OECD Test Guideline 209, GLP: no

Ecotoxicology Assessment

Acute aquatic toxicity	:	Based on available data, the classification criteria are not met.
Chronic aquatic toxicity	:	Based on available data, the classification criteria are not met.

Distillates (petroleum), hydrotreated light :

Toxicity to fish	:	LL50: 2,5 mg/l, 96 h, Oncorhynchus mykiss (rainbow trout), semi-static test, OECD Test Guideline 203, GLP: yes, Value refered to the Water accumulated fraction (WAF).
Toxicity to daphnia and other aquatic invertebrates	:	EL50: 1,4 mg/l, 48 h, Daphnia magna (Water flea), static test, OECD Test Guideline 202, GLP: yes, Value refered to the Water accumulated fraction (WAF).
Toxicity to algae	:	EL50: 1,3 mg/l, 72 h, Pseudokirchneriella subcapitata (green algae), static test, OECD Test Guideline 201, GLP: yes, Value refered to the Water accumulated fraction (WAF).
Toxicity to bacteria	:	LL50: 677,9 mg/l, 72 h, Tetrahymena pyriformis, QSAR, GLP: no
Toxicity to fish (Chronic toxicity)	:	NOEL: 0,098 mg/l, 28 d, Oncorhynchus mykiss (rainbow trout), QSAR, GLP: no
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEL: 0,48 mg/l, 21 d, Daphnia magna (Water flea), semi-static test, OECD Test Guideline 211, GLP: yes, Value refered to the Water accumulated fraction (WAF).

Ecotoxicology Assessment

Acute aquatic toxicity	:	Based on available data, the classification criteria are not met.
Chronic aquatic toxicity	:	Toxic to aquatic life with long lasting effects.

Isodecyl diphenyl phosphite :

Toxicity to fish	:	study technically not feasible
Toxicity to daphnia and other aquatic invertebrates	:	study technically not feasible
Toxicity to algae	:	study technically not feasible
Toxicity to bacteria	:	study technically not feasible

Ecotoxicology Assessment

Acute aquatic toxicity	:	Based on available data, the classification criteria are not met.
Chronic aquatic toxicity	:	Based on available data, the classification criteria are not met.

Triisodecyl phosphite :

Toxicity to fish	:	study technically not feasible

Toxicity to daphnia and other aquatic invertebrates	:	study technically not feasible
Toxicity to algae	:	study technically not feasible
Toxicity to bacteria	:	study technically not feasible
Toxicity to fish (Chronic toxicity)	:	study technically not feasible
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	study technically not feasible

Ecotoxicology Assessment

Acute aquatic toxicity	:	Based on available data, the classification criteria are not met.
Chronic aquatic toxicity	:	Based on available data, the classification criteria are not met.

12.2 Persistence and degradability

Components:

Barium compounds :

Biodegradability	:	The methods for determining biodegradability are not applicable to inorganic substances.

Barium compounds :

Biodegradability	:	no data available

Diisodecyl phenyl phosphite :

Biodegradability	:	aerobic, 10 %, Result: Inherently biodegradable., Exposure time: 28 d, activated sludge, OECD Test Guideline 301 B, GLP: yes

2-(2-Butoxyethoxy) ethanol :

Biodegradability	:	aerobic, Result: Readily biodegradable., Exposure time: 28 d, activated sludge, OECD Test Guideline 301, GLP: no

Distillates (petroleum), hydrotreated light :

Biodegradability	:	aerobic, 61 %, Result: Readily biodegradable., Exposure time: 28 d, activated sludge, OECD Test Guideline 301 F, GLP: yes

Isodecyl diphenyl phosphite :

Biodegradability	:	aerobic, 0,14 %, Exposure time: 28 d, activated sludge, OECD Test Guideline 301D, Not readily biodegradable.

Triisodecyl phosphite :

Biodegradability	:	aerobic, 0,47 %, Result: Not readily biodegradable., Exposure time: 28 d, activated sludge, OECD Test Guideline 301D

12.3 Bioaccumulative potential

Components:

Barium compounds :
Bioaccumulation : Read-across (Analogy)
: Bioaccumulation is unlikely.

Barium compounds :
Bioaccumulation : no data available

Diisodecyl phenyl phosphite :
Bioaccumulation : Bioconcentration factor (BCF): 33,27 - 606,5, QSAR

2-(2-Butoxyethoxy) ethanol :
Bioaccumulation : Bioaccumulation is unlikely.

Distillates (petroleum), hydrotreated light :
Bioaccumulation : no data available

Isodecyl diphenyl phosphite :
Bioaccumulation : Bioconcentration factor (BCF): 606,5, QSAR

Triisodecyl phosphite :
Bioaccumulation : study scientifically unjustified

12.4 Mobility in soil

Components:

Barium compounds :
Mobility : no data available

Barium compounds :
Mobility : no data available

Diisodecyl phenyl phosphite :
Mobility : QSAR, Predicted distribution to environmental compartments, Sediment, Soil

2-(2-Butoxyethoxy) ethanol :
Mobility : QSAR, Predicted distribution to environmental compartments, Water

Distillates (petroleum), hydrotreated light :
Mobility : QSAR, Predicted distribution to environmental compartments, Air
Physico-chemical removability : The product is slightly soluble in water. It can be largely eliminated from the water by abiotic processes, e. g. mechanical separation.

Isodecyl diphenyl phosphite :
Mobility : QSAR, Predicted distribution to environmental compartments, Sediment, Soil

Triisodecyl phosphite :
Mobility : QSAR, Predicted distribution to environmental compartments,

Soil, Sediment

12.5 Results of PBT and vPvB assessment

Components:

Barium compounds :
Assessment : Based on available data, the classification criteria are not met.

Barium compounds :
Assessment : Based on available data, the classification criteria are not met.

Diisodecyl phenyl phosphite :
Assessment : Based on available data, the classification criteria are not met.

2-(2-Butoxyethoxy) ethanol :
Assessment : Based on available data, the classification criteria are not met.

Distillates (petroleum), hydrotreated light :
Assessment : Based on available data, the classification criteria are not met.

Isodecyl diphenyl phosphite :
Assessment : Based on available data, the classification criteria are not met.

Triisodecyl phosphite :
Assessment : Based on available data, the classification criteria are not met.

12.6 Other adverse effects

Barium compounds :
Further information : No information available.

Barium compounds :
Further information : No information available.

Diisodecyl phenyl phosphite :
Further information : No information available.

2-(2-Butoxyethoxy) ethanol :
Further information : No information available.

Distillates (petroleum), hydrotreated light :
Further information : No information available.

Isodecyl diphenyl phosphite :
Further information : No information available.

Triisodecyl phosphite :
Further information : No information available.

13. Disposal considerations

13.1 Waste treatment methods

Product : Dispose of contents/container in accordance with local/regional/national/international/regulations.

14. Transport information

14.1 UN number

DOT
Not dangerous goods
IMDG
Not dangerous goods
IATA
Not dangerous goods

14.2 Proper shipping name

DOT
Not dangerous goods
IMDG
Not dangerous goods
IATA
Not dangerous goods

14.3 Transport hazard class

DOT
Not dangerous goods
IMDG
Not dangerous goods
IATA
Not dangerous goods

14.4 Packing group

DOT
Not dangerous goods
IMDG
Not dangerous goods
IATA
Not dangerous goods

14.5 Environmental hazards

DOT
Not dangerous goods
IMDG
Not dangerous goods
IATA
Not dangerous goods

14.6 Special precautions for user

See this safety data sheet chapter 6. - 8.

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Remarks : No transport according to Annex II of MARPOL 73/78 and the IBC Code

15. Regulatory information

Section 313 Supplier Notification (USA)

This product contains the following toxic chemicals subject to the reporting requirements of section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 and of 40 CFR 372:

Component	CAS/313 Category Code	Wt (%)
Barium compounds	N040	20.8
Zinc compounds	N982	20.6

National Legislation:

Registration Status:

EINECS	:	listed
TSCA	:	listed
DSL	:	listed
AICS	:	listed
ENCS	:	Not listed
ECL	:	listed
PICCS	:	listed
CHINA	:	listed

16. Other information

Date of Preparation or last change: 19.06.2015

HMIS Rating (USA)

Health	:	2
Flammability	:	1
Reactivity	:	1
Personal Protection	:	G

HTS #	:	3812.30.9000

Full text of R-phrases

R20/22	Harmful by inhalation and if swallowed.
R23/24/25	Toxic by inhalation, in contact with skin and if swallowed.
R34	Causes burns.
R36	Irritating to eyes.
R36/38	Irritating to eyes and skin.
R38	Irritating to skin.
R43	May cause sensitisation by skin contact.
R48/20/21/22	Harmful: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed.
R48/23/24/25	Toxic: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed.
R50	Very toxic to aquatic organisms.
R51	Toxic to aquatic organisms.
R51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R53	May cause long-term adverse effects in the aquatic environment.
R60	May impair fertility.
R65	Harmful: may cause lung damage if swallowed.
R68	Possible risk of irreversible effects.

Full text of H-Statements

H301	Toxic if swallowed.
H302	Harmful if swallowed.
H304	May be fatal if swallowed and enters airways.
H311	Toxic in contact with skin.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H331	Toxic if inhaled.
H332	Harmful if inhaled.
H336	May cause drowsiness or dizziness.
H341	Suspected of causing genetic defects.
H360F	May damage fertility.
H372	Causes damage to organs through prolonged or repeated exposure.
H373	May cause damage to organs through prolonged or repeated exposure.
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.

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.