SAFETY DATA SHEET

Creation Date 21-Oct-2009 **Revision Date** 24-Nov-2010 **Revision Number** 1

1. PRODUCT AND COMPANY IDENTIFICATION

Product Identifier

Product Description: **Dibutylzinc, 1M solution in heptanes**
Cat No. **428410000; 428411000; 428418000**

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
Acros Organics BVBA
Janssen Pharmaceuticalaan 3a
2440 Geel, Belgium
E-mail address begel.sdsdesk@thermofisher.com

Emergency Telephone Number
For information in the US, call: 800-ACROS-01
For information in Europe, call: +32 14 57 52 11

Emergency Number, Europe: +32 14 57 52 99
Emergency Number, US: 201-796-7100

CHEMTREC Phone Number, US: 800-424-9300
CHEMTREC Phone Number, Europe: 703-527-3887

2. HAZARDS IDENTIFICATION

Classification of the substance or mixture
REGULATION (EC) No 1272/2008

Aspiration Toxicity	Category 1
Skin Corrosion / irritation	Category 1 B
Specific target organ systemic toxicity (single exposure)	Category 3
Acute aquatic toxicity	Category 1
Chronic aquatic toxicity	Category 1
Flammable liquids.	Category 2
Pyrophoric liquids	Category 1
Substances/mixtures which, in contact with water, emit flammable gases	Category 1

Classification according to EU Directives 67/548/EEC or 1999/45/EC

For the full text of the R phrases mentioned in this Section, see Section 16

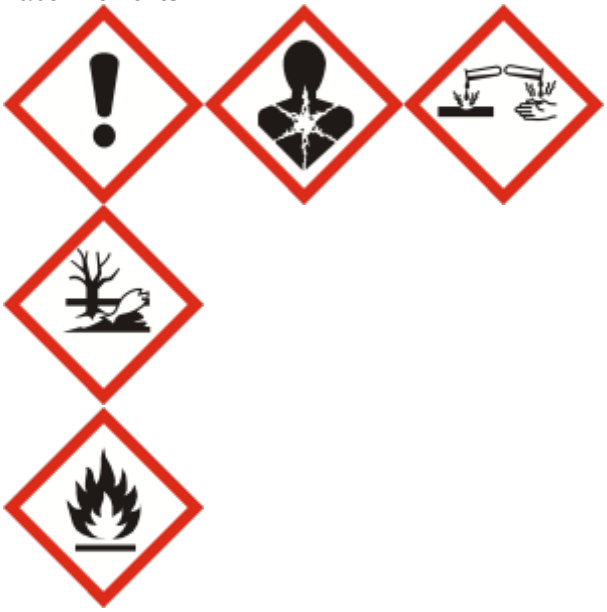
Symbol(s) C - Corrosive
F - Highly flammable
N - Dangerous for the environment

R -phrase(s) R11 - Highly flammable
R34 - Causes burns
R65 - Harmful: may cause lung damage if swallowed
R67 - Vapors may cause drowsiness and dizziness

2. HAZARDS IDENTIFICATION

Risk Combination Phrases R14/15 - Reacts violently with water, liberating extremely flammable gases
R50/53 - Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

Label Elements



Signal Word **Danger**

Hazard Statements
H314 - Causes severe skin burns and eye damage
H336 - May cause drowsiness or dizziness
H304 - May be fatal if swallowed and enters airways
H410 - Very toxic to aquatic life with long lasting effects
H260 - In contact with water releases flammable gases which may ignite spontaneously
H225 - Highly flammable liquid and vapor
H250 - Catches fire spontaneously if exposed to air
EUH014 - Reacts violently with water

Precautionary Statements - EU (§28, 1272/2008)
P280 - Wear eye protection/face protection
P301 + P330 + P331 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P261 - Avoid breathing dust/fume/gas/mist/vapors/spray
P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking
P402 + P404 - Store in a dry place. Store in a closed container
P273 - Avoid release to the environment

Other Hazards
No information available.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	EC No.	Weight %	CAS-No	Classification	GHSCLAS	REACH Reg. No.
Heptane (n-) 142-82-5	EEC No. 205-563-8	76	142-82-5	F;R11 Xn;R65 Xi;R38 R67 N;R50/53;	Flam. Liq. 2 (H225) Asp. Tox. 1 (H304) Skin Irrit. 2 (H315) STOT SE 3 (H336) Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410)	-
Dibutylzinc 1119-90-0		24	1119-90-0	C;R34 F;R15-17 R14	Skin Corr. 1B (H314) Pyr. Sol. 1 (H250) (EUH014)	-

For the full text of the R phrases mentioned in this Section, see Section 16

4. FIRST AID MEASURES

Description of first aid measures

Eye Contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes Immediate medical attention is required

Skin Contact Wash off immediately with plenty of water for at least 15 minutes Immediate medical attention is required

Ingestion Do not induce vomiting Call a physician or Poison Control Center immediately

Inhalation Move to fresh air If breathing is difficult, give oxygen Do not use mouth-to-mouth resuscitation if victim ingested or inhaled the substance; induce artificial respiration with a respiratory medical device Immediate medical attention is required

Notes to Physician Treat symptomatically

5. FIRE-FIGHTING MEASURES

Extinguishing media

Suitable Extinguishing Media

Dry chemical

Extinguishing media which must not be used for safety reasons

Water

Special hazards arising from the substance or mixture

Flammable Containers may explode when heated Vapors may form explosive mixtures with air Vapors may travel to source of ignition and flash back Reacts violently with water Contact with water liberates extremely flammable gases

Advice for fire-fighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear Thermal decomposition can lead to release of irritating gases and vapors

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures
Use personal protective equipment Keep people away from and upwind of spill/leak Evacuate personnel to safe areas Remove all sources of ignition Take precautionary measures against static discharges

Environmental precautions
Should not be released into the environment

Methods and material for containment and cleaning up
Soak up with inert absorbent material Keep in suitable and closed containers for disposal Remove all sources of ignition Use spark-proof tools and explosion-proof equipment Do not expose spill to water

7. HANDLING AND STORAGE

Precautions for Safe Handling
Use only under a chemical fume hood Wear personal protective equipment Do not get in eyes, on skin, or on clothing Keep away from open flames, hot surfaces and sources of ignition Use only non-sparking tools Use explosion-proof equipment Do not breathe vapors/dust Do not ingest Take precautionary measures against static discharges Do not allow contact with water

Conditions for safe storage, including any incompatibilities
Keep containers tightly closed in a dry, cool and well-ventilated place Corrosives area Flammables area Keep away from heat and sources of ignition Keep away from water Keep under nitrogen

Specific End Uses

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters
Exposure limits

Component	European Union	The United Kingdom	France	Belgium	Spain
Heptane (n-)			VME: 1668 mg/m^3 VME: 400 ppm VLCT: 2085 mg/m^3 VLCT: 500 ppm	STEL: 500 ppm STEL: 2085 mg/m^3 TWA: 1664 mg/m^3 TWA: 400 ppm	VLA-ED: 2085 mg/m^3 VLA-ED: 500 ppm

Component	Italy	Portugal	The Netherlands	Finland	Denmark
Heptane (n-)	TWA: 500 ppm TWA: 2085 mg/m^3	STEL: 500 ppm TWA: 400 ppm	STEL: 1600 mg/m^3 TWA: 1200 mg/m^3	TWA: 300 ppm TWA: 1200 mg/m^3 STEL: 2100 mg/m^3 STEL: 500 ppm	TWA: 820 mg/m^3 TWA: 200 ppm

Component	Austria	Switzerland	Poland	Norway	Ireland
Heptane (n-)	STEL: 2000 ppm STEL: 8000 mg/m^3 MAK: 500 ppm MAK: 2000 mg/m^3	STEL: 1600 mg/m^3 STEL: 400 ppm MAK: 1600 mg/m^3 MAK: 400 ppm	NDSCh: 2000 mg/m^3 NDS: 1200 mg/m^3	TWA: 200 ppm TWA: 800 mg/m^3	TWA: 400 ppm TWA: 1600 mg/m^3

Derived No Effect Level (DNEL) No information available.
Predicted No Effect Concentration (PNEC) No information available.

Exposure controls

Engineering Measures Use only under a chemical fume hood Ensure that eyewash stations and safety showers are close to the workstation location Use explosion-proof electrical/ventilating/lighting/equipment

Personal protective equipment

Eye Protection	Safety glasses with side-shields
Hand Protection	Protective gloves
Skin and body protection	Wear appropriate protective gloves and clothing to prevent skin exposure
Respiratory Protection	Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced

Hygiene Measures Handle in accordance with good industrial hygiene and safety practice

Environmental exposure controls No information available.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Liquid
pH	No information available.
Boiling Point/Range	98 - 99°C / 208.4 - 210.2°F
Melting Point/Range	-91°C / -131.8°F
Flash Point	-4°C / 24.8°F
Water Solubility	Reacts violently with water
Specific Gravity	0.747
Molecular Formula	C8 H18 Zn
Molecular Weight	179.61

10. STABILITY AND REACTIVITY

Reactivity

Chemical Stability

Moisture sensitive. Reacts violently with water, liberating highly flammable gases.

Possibility of Hazardous Reactions

Hazardous Polymerization Hazardous polymerization does not occur.

Hazardous Reactions . Reacts violently with water..

Conditions to Avoid

Incompatible products, Excess heat, Keep away from open flames, hot surfaces and sources of ignition, Exposure to moist air or water.

Incompatible Materials

Strong oxidizing agents, Acids, Alcohols.

Hazardous Decomposition Products

Carbon monoxide (CO). Carbon dioxide (CO_2).

11. TOXICOLOGICAL INFORMATION

Information on Toxicological Effects

Acute Toxicity

Product Information Product does not present an acute toxicity hazard based on known or supplied information

Component Information

11. TOXICOLOGICAL INFORMATION

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Heptane (n-)		3000 mg/kg (Rabbit)	103 g/m^3 (Rat) 4 h

Chronic Toxicity

Carcinogenicity There are no known carcinogenic chemicals in this product

Sensitization No information available.
Mutagenic Effects No information available
Reproductive Effects No information available.
Developmental Effects No information available.
Target Organs Skin Respiratory system Eyes Gastrointestinal tract (GI)
Other Adverse Effects The toxicological properties have not been fully investigated. See actual entry in RTECS for complete information
Endocrine Disruptor Information None known

12. ECOLOGICAL INFORMATION

Toxicity

Ecotoxicity effects Do not empty into drains

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Heptane (n-)		375.0 mg/L LC50 96 h		EC50: >10 mg/L/24h

Persistence and degradability
No information available
Bioaccumulative potential
No information available.

Component	log Pow
Heptane (n-)	4.66

Mobility in soil
No information available.
Results of PBT and vPvB assessment
Other adverse effects
No information available

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 for local recycling, recovery or waste disposal

14. TRANSPORT INFORMATION

IMDG/IMO

14. TRANSPORT INFORMATION

UN-No	UN3399
Hazard Class	4.3
Subsidiary Hazard Class	3
Packing Group	I
Proper Shipping Name	Organometallic substance, liquid, water-reactive, flammable (Mixture)

ADR

UN-No	UN3399
Hazard Class	4.3
Subsidiary Class	3
Packing Group	I
Proper Shipping Name	Organometallic substance, liquid, water-reactive, flammable (Mixture)

IATA

UN-No	UN3399
Hazard Class	4.3
Subsidiary Hazard Class	3
Packing Group	I
Proper Shipping Name	Organometalic substance, liquid, water-reactive, flammable (Mixture)

15. REGULATORY INFORMATION

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

International Inventories

Component	EINECS	ELINCS	NLP	TSCA	DSL	NDSL	PICCS	ENCS	CHINA	AICS	KECL
Heptane (n-)	205-563-8	-		T	X	-	X	X	X	X	KE-18271 X

Legend

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
EINECS/ELINCS - European Inventory Lists
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
PICCS - Philippines Inventory of Chemicals and Chemical Substances
ENCS - Japan Existing and New Chemical Substances
CHINA - China Inventory of Existing Chemical Substances
AICS - Inventory of Chemical Substances
KECL - Existing and Evaluated Chemical Substances

Chemical Safety Assessment

16. OTHER INFORMATION

16. OTHER INFORMATION

Text of R phrases mentioned in Section 2-3

R11 - Highly flammable
R17 - Spontaneously flammable in air
R34 - Causes burns
R38 - Irritating to skin
R65 - Harmful: may cause lung damage if swallowed
R67 - Vapors may cause drowsiness and dizziness
R14/15 - Reacts violently with water, liberating extremely flammable gases
R50/53 - Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

Revision Date 24-Nov-2010
Revision Summary Not applicable

This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006

Disclaimer

The information provided on this SDS 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 guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as 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 material or in any process, unless specified in the text

End of Safety Data Sheet