Safety Data Sheet
acc. to OSHA HCS (HazCom 2012)

Printing date 12/15/2017 Reviewed on 12/15/2017

1 Identification

· **Product identifier**

· **Trade name:** **KS137 - PA3 - Barium Chloride Solution**

· **Catalogue number:**
56Z013798, 56L013765, 56U013765, 56L013772, 56U013772, 56L013730, 56U013730, 56L013789, 56U013789, 56L013797, 56U013797, AS-K20137-KW, AS-K20137-WS, AS-K27528-KW

· **Application of the substance / the mixture:** Reagent for water analysis

· **Manufacturer/Supplier:**
Tintometer Inc.
6456 Parkland Drive
Sarasota, FL 34243
USA
phone: (941) 756-6410
fax: (941) 727-9654
www.lovibond.us
Made in Germany

· **Emergency telephone number:** + 1 866 928 0789 (English, French, Spanish)

2 Hazard(s) identification

· **Classification of the substance or mixture**

GHS07

Acute Tox. 4 H302 Harmful if swallowed.

· **Label elements**
· **GHS label elements** The product is classified and labeled according to the Hazard Communication Standard (HCS).
· **Hazard pictograms**

GHS07

· **Signal word** Warning
· **Hazard-determining components of labeling:**
barium chloride dihydrate
· **Hazard statements**
H302 Harmful if swallowed.
· **Precautionary statements**
P261 Avoid breathing mist/vapours/spray.
P301+P312 If swallowed: Call a poison center/doctor if you feel unwell.
P330 Rinse mouth.

· **Other hazards** No further relevant information available.

3 Composition/information on ingredients

· **Chemical characterization: Mixtures**
· **Description:** aqueous solution

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· **Composition and Information on Ingredients:**
Percent ranges are used due to the confidential product information.

CAS: 10326-27-9 EINECS: 233-788-1 Index number: 056-004-00-8 RTECS: CQ 8751000	barium chloride dihydrate	Acute Tox. 3, H301; Acute Tox. 4, H332	5–10%

· **Additional information:** For the wording of the listed hazard phrases refer to section 16.

4 First-aid measures

· **Description of first aid measures**
· **General information:** Immediately remove any clothing soiled by the product.
· **After inhalation:** Supply fresh air; consult doctor in case of complaints.
· **After skin contact:** Immediately rinse with plenty of water.
· **After eye contact:**
Rinse opened eye for several minutes (at least 15 min) under running water. If symptoms persist, consult a doctor.
· **After swallowing:**
Rinse out mouth and then drink 1-2 glasses of water.
Seek medical treatment.
· **Most important symptoms and effects, both acute and delayed**
after inhalation:
coughing
breathing difficulty
mucous membrane irritation
after resorption:
irritations
sickness
vomiting
diarrhoea
dizziness
respiratory paralysis
cardiovascular disorders
· **Danger:**
Danger of circulatory collapse.
Danger of disturbed cardiac rhythm.
· **Indication of any immediate medical attention and special treatment needed:**
1-5% sodium sulfate solution in acute poisoning

5 Fire-fighting measures

· **Extinguishing media**
· **Suitable extinguishing agents:** Use fire fighting measures that suit the environment.
· **Special hazards arising from the substance or mixture**
The product is not combustible.
Formation of toxic gases is possible during heating or in case of fire.
Hydrogen chloride (HCl)
· **Advice for firefighters**
· **Protective equipment:**
Wear self-contained respiratory protective device.
Wear fully protective suit.
· **Additional information**
Collect contaminated fire fighting water separately. It must not enter the sewage system.
Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.
Ambient fire may liberate hazardous vapours.

6 Accidental release measures

· **Personal precautions, protective equipment and emergency procedures**
· **Advice for non-emergency personnel:**
Wear protective equipment. Keep unprotected persons away.
Ensure adequate ventilation

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· **Advice for emergency responders:** Protective equipment: see section 8
· **Environmental precautions:**
Do not allow product to reach sewage system or any water course.
Dilute with plenty of water.
· **Methods and material for containment and cleaning up:**
Ensure adequate ventilation.
Absorb with liquid-binding material (sand, diatomite, universal binders).
Dispose contaminated material as waste according to item 13.
· **Reference to other sections**
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

7 Handling and storage

· **Handling:**
· **Precautions for safe handling**
· **Advice on safe handling:** Prevent formation of aerosols.
· **Hygiene measures:**
Take off immediately all contaminated clothing.
Wash hands before breaks and at the end of work.
Do not eat, drink or smoke when using this product.

· **Conditions for safe storage, including any incompatibilities**
· **Storage:**
· **Requirements to be met by storerooms and receptacles:** Store in a cool location.
· **Information about storage in one common storage facility:** Not required.
· **Further information about storage conditions:**
Protect from heat and direct sunlight.
Protect from exposure to the light.
Protect from humidity and water.
· **Recommended storage temperature:** 20°C +/- 5°C (approx. 68°F)
· **Specific end use(s)** No further relevant information available.

8 Exposure controls/personal protection

· **Control parameters**

· **Components with limit values that require monitoring at the workplace:**	
CAS: 10326-27-9 barium chloride dihydrate	
PEL (USA)	Long-term value: 0.5 mg/m³ as Ba
REL (USA)	Long-term value: 0.5 mg/m³ as Ba
TLV (USA)	Long-term value: 0.5 mg/m³ as Ba
EL (Canada)	Long-term value: 0.5 mg/m³ as Ba

· **Additional information:** The lists that were valid during the creation were used as basis.

· **Engineering measures:**
Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.
See item 7.

· **Personal protective equipment:**
· **Breathing equipment:** Use respiratory protective device against the effects of fumes/dust/aerosol.
· **Recommended filter device for short term use:** Filter P2
· **Protection of hands:**
Preventive skin protection by use of skin-protecting agents is recommended.
After use of gloves apply skin-cleaning agents and skin cosmetics.
· **Material of gloves**
Nitrile rubber, NBR
Recommended thickness of the material: ≥ 0.11 mm

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· **Penetration time of glove material**
Value for the permeation: Level ≤ 1 (10 min)
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
· **Eye protection:**
Safety glasses
use against the effects of fumes / dust
· **Body protection:** Protective work clothing

· **Limitation and supervision of exposure into the environment:**
Do not allow product to reach sewage system or any water course.

9 Physical and chemical properties

· **Information on basic physical and chemical properties**	
· **Appearance:**	
Form / Physical state:	Liquid
Color:	Colorless
· **Odor:**	Odorless
· **Odor threshold:**	Not applicable.
· **pH-value at 20 °C (68 °F):**	4.5
· **Melting point/freezing point:**	Not determined.
· **Initial boiling point and boiling range:**	Not determined.
· **Flash point:**	Not applicable.
· **Flammability (solid, gas):**	Not applicable.
· **Ignition temperature:**	Not applicable.
· **Decomposition temperature:**	Not determined.
· **Auto-ignition temperature:**	Product is not self-igniting.
· **Danger of explosion:**	Product does not present an explosion hazard.
· **Flammability or explosive limits:**	
Lower:	Not applicable.
Upper:	Not applicable.
· **Oxidizing properties:**	none
· **Vapor Pressure:**	Not determined.
· **Density at 20 °C (68 °F):**	1.3 g/cm³ (10.85 lbs/gal)
· **Relative density:**	Not determined.
· **Vapor density:**	Not determined.
· **Evaporation rate:**	Not determined.
· **Solubility(ies)**	
Water:	Fully miscible.
· **Partition coefficient (n-octanol/water):**	Not determined.
· **Viscosity:**	Not determined.
· **Solvent content:**	
Organic solvents:	0.0 %
Water:	> 90 %
Solids content:	< 10 %
· **Other information**	No further relevant information available.

10 Stability and reactivity

· **Reactivity** see section "Possibility of hazardous reactions"
· **Chemical stability** Stable at ambient temperature (room temperature).
· **Possibility of hazardous reactions**
furan-2-percarbonic acid
---> Danger of explosion.

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Reacts with strong oxidizing agents.
Reacts with reducing agents.
Reacts with acids.

· **Conditions to avoid** Strong heating (decomposition)
· **Incompatible materials:** No further relevant information available.
· **Hazardous decomposition products:**
Chlorine compounds
see section 5

11 Toxicological information

· **Information on toxicological effects**
· **Acute toxicity:** Classification according to calculation procedure.

· **Acute toxicity estimate ($ATE_{(MIX)}$) - Calculation method:**		
Oral	GHS $ATE_{(MIX)}$	1265 mg/kg (.)
Inhalative	GHS $ATE_{(MIX)}$	16 mg/l/4h (aerosol)

· **LD/LC50 values that are relevant for classification:**		
CAS: 10326-27-9 barium chloride dihydrate		
Oral	LD50	100 mg/kg (ATE) (for calculation) 118 mg/kg (rat) (anhydrous - IUCLID)
Inhalative	LC50	1.5 mg/l/4h (ATE)

· **Primary irritant effect:**
· **on the skin:** Based on available data, the classification criteria are not met.
· **on the eye:** Based on available data, the classification criteria are not met.
· **Information on components:** CAS 10326-27-9: chronic: dermatitis

· **Sensitization:** Based on available data, the classification criteria are not met.

· **Carcinogenic categories**

· **IARC (International Agency for Research on Cancer)**
None of the ingredients is listed.

· **NTP (National Toxicology Program)**
None of the ingredients is listed.

· **OSHA-Ca (Occupational Safety & Health Administration)**
None of the ingredients is listed.

· **Other information:** see section 8 / 15

· **Synergistic Products:** None

· **CMR effects (carcinogenity, mutagenicity and toxicity for reproduction):** The following statements refer to the mixture:
· **Germ cell mutagenicity** Based on available data, the classification criteria are not met.
· **Carcinogenicity** Based on available data, the classification criteria are not met.
· **Reproductive toxicity** Based on available data, the classification criteria are not met.

· **STOT (specific target organ toxicity) -single exposure** Based on available data, the classification criteria are not met.
· **STOT (specific target organ toxicity) -repeated exposure** Based on available data, the classification criteria are not met.
· **Aspiration hazard** Based on available data, the classification criteria are not met.

· **Additional toxicological information:**
CAS 10326-27-9: Absorption through gastro-intestinal tract, mucous membranes
Other dangerous properties can not be excluded.
· **Experience with humans:** CAS 10326-27-9: Can cause kidney damages.

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12 Ecological information

· **Toxicity**

· **Aquatic toxicity:**

CAS: 10326-27-9 barium chloride dihydrate	
LC50	870 mg/l/48h (gold orfe) IUCLID
EC50	21.9 mg/l/48h (Daphnia magna) (IUCLID)

· **Other information:**
Toxic for fish:
Ba > 158 mg/l

· **Persistence and degradability** .

· **Other information:**
Mixture of inorganic compounds.
Methods for the determination of biodegradability are not applicable to inorganic substances.

· **Bioaccumulative potential**
Pow = n-octanol/wasser partition coefficient
log Pow < 1 = Does not accumulate in organisms.

CAS: 10326-27-9 barium chloride dihydrate	
log Pow	0.85 (.)

· **Mobility in soil** No further relevant information available.

· **Other adverse effects**
Reacts with water to harmful mixtures.
Avoid transfer into the environment.

13 Disposal considerations

· **Waste treatment methods**

· **Recommendation:**
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
Hand over to hazardous waste disposers.

· **Uncleaned packagings:**

· **Recommendation:** Disposal must be made according to official regulations.

· **Recommended cleansing agent:** Water, if necessary with cleansing agents.

14 Transport information

· **UN-Number** · **DOT, IMDG, IATA**	none
· **UN proper shipping name** · **DOT, IMDG, IATA**	none
· **Transport hazard class(es)** · **DOT, IMDG, IATA** · **Class**	none
· **Packing group** · **DOT, IMDG, IATA**	none
· **Environmental hazards:**	Not applicable.
· **Special precautions for user**	Not applicable.
· **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**	Not applicable.
· **Transport/Additional information:**	Not dangerous according to the above specifications.

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15 Regulatory information

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

· **Section 355 (Extremely hazardous substances):**
None of the ingredients is listed.

· **Section 313 (Specific toxic chemical listings):**

CAS: 10326-27-9	barium chloride dihydrate

· **TSCA (Toxic Substances Control Act):**
All ingredients are listed.

· **Proposition 65**

· **Chemicals known to cause cancer:**
None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for females:**
None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for males:**
None of the ingredients is listed.

· **Chemicals known to cause developmental toxicity:**
None of the ingredients is listed.

· **New Jersey Right-to-Know List:**
None of the ingredients is listed.

· **New Jersey Special Hazardous Substance List:**
None of the ingredients is listed.

· **Pennsylvania Right-to-Know List:**
None of the ingredients is listed.

· **Pennsylvania Special Hazardous Substance List:**
None of the ingredients is listed.

· **EPA (Environmental Protection Agency)**

CAS: 10326-27-9	barium chloride dihydrate	D, CBD(inh), NL(oral)

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**
None of the ingredients is listed.

· **Information about limitation of use:** Employment restrictions concerning young persons must be observed.

· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Relevant phrases**
H301 Toxic if swallowed.
H332 Harmful if inhaled.

· **Date of preparation / last revision** 12/15/2017 / 2

· **Abbreviations and acronyms:**
OECD: Organisation for Economic Co-operation and Development
STOT: specific target organ toxicity
SE: single exposure
RE: repeated exposure
EC50: half maximal effective concentration
IC50: hallf maximal inhibitory concentration
NOEL or NOEC: No Observed Effect Level or Concentration
ACGIH® - American Conference of Governmental Industrial Hygienists
•A1 - Confirmed human carcinogen
•A2 - Suspected human carcinogen
•A3 - Confirmed animal carcinogen with unknown relevance to humans
•A4 - Not classifiable as a human carcinogen
•A5 - Not suspected as a human carcinogen
IARC - International Agency for Research on Cancer
•Group 1 - Carcinogenic to humans
•Group 2A - Probably carcinogenic to humans
•Group 2B - Possibly carcinogenic to humans

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•Group 3 - Not classifiable as to carcinogenicity to humans
•Group 4 - Probably not carcinogenic to humans
NTP - National Toxicology Program, U.S. Department of Health and Human Services
•Group K - Known to be Human Carcinogens
•Group R - Reasonably Anticipated to be Human Carcinogens
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
NIOSH: National Institute for Occupational Safety
OSHA: Occupational Safety & Health
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit
Acute Tox. 3: Acute toxicity – Category 3
Acute Tox. 4: Acute toxicity – Category 4

· **Sources**
Data arise from safety data sheets, reference works and literature.
IUCLID (International Uniform Chemical Information Database)