

Revision number: 2 Revision date: 10/06/2014

1. IDENTIFICATION

Product name: Product code: 4-Butyrylbiphenyl B1956

Product use: Restrictions on use: For laboratory research purposes. Not for drug or household use.

TCI AMERICA

SAFETY DATA SHEET

| Company: | Emergency telephone number: |
|-----------------------------------|--|
| TCI America | Chemical Emergencies: |
| 9211 N. Harborgate Street | TCI America (8:00am - 5:00pm) PST |
| Portland, OR 97203 U.S.A. | +1-503-286-7624 |
| Telephone: | Transportation Emergencies: |
| +1-800-423-8616 / +1-503-283-1681 | Chemtrec 24-Hour |
| Fax: | +1-800-424-9300 (U.S.A.) |
| +1-888-520-1075 / +1-503-283-1987 | +1-703-527-3887 (International) |
| e-mail: | Responsible department: |
| sales-US@TCIchemicals.com | TCI America |
| www.TCIchemicals.com | Environmental Health Safety and Security +1- 503-286-7624 |

2. HAZARD(S) IDENTIFICATION

| OSHA Haz Com: CFR 1910.1200: | Not classifiable |
|------------------------------|------------------|
| Signal word: | None |
| Hazard Statement(s): | None |
| Pictogram(s) or Symbol(s): | None |
| Precautionary Statement(s): | None |

Supplementary Information:

While this material is not classified as hazardous under OSHA, this SDS contains valuable information critical to safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.

3. COMPOSITION/INFORMATION ON INGREDIENTS

| Substance/Mixture: Components: | Substance 4-Butyrylbiphenyl |
|-----------------------------------|-----------------------------------|
| Percent: | >99.0%(GC) |
| CAS Number: | 13211-01-3 |
| Molecular Weight: | 224.30 |
| Chemical Formula: | C ₁₆ H ₁₆ O |
| Synonyms: | 4'-Phenylbutyrophenone |

4. FIRST-AID MEASURES

| Inhalation: | Move victim to fresh air. Call emergency medical service. Give artificial respiration if victim is not breathing. Administer oxygen if breathing is difficult. Keep victim warm and quiet. Treat symptomatically and supportively. Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves. |
|---------------|---|
| Skin contact: | Remove and isolate contaminated clothing and shoes. In case of contact with substance, immediately flush skin with running water for at least 20 minutes. Treat symptomatically and supportively. Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves. |

| 4. FIRST-AID MEASURES Eye contact: | | |
|--|--|--|
| Ingestion: | immediately flush eyes with running water for at least 20 minutes. Keep victim warm and quiet. Trea symptomatically and supportively. Effects of exposure to substance may be delayed. Ensure that me personnel are aware of the material(s) involved and take precautions to protect themselves. | |
| Symptoms/effects: | | |
| Acute: Delayed: | No data available No data available | |
| Immediate medical attention: | If breathing has stopped, perform artificial respiration. Use first aid treatment according to the nature of the injury. Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves. | |
| 5. FIRE-FIGHTING MEASURES | | |
| Suitable extinguishing media: | Dry chemical, CO_2 , water spray, or alcohol-resistant foam. Consult with local fire authorities before attempting large scale fire fighting operations. | |
| Specific hazards arising from the cher | mical | |
| Hazardous combustion products: Other specific hazards: | These products include: Carbon oxides Closed containers may explode from heat of a fire. | |
| Not available Special protective equipment for fire-f Structural fire fighters' protective clothing 6. ACCIDENTAL RELEASE MEAS | provides limited protection in fire situations ONLY; it may not be effective in spill situations. | |
| Personal precautions: | Do not touch damaged containers or spilled material unless wearing appropriate protective clothing | |
| | (Soction 8) | |
| Personal protective equipment: Emergency procedures: | (Section 8). Wear protective clothing, gloves and eye protection. In case of a spill and/or a leak, always shut off any sources of ignition, ventilate the area, and excercise caution. | |
| | Wear protective clothing, gloves and eye protection. In case of a spill and/or a leak, always shut off any sources of ignition, ventilate the area, and excercise caution. In case of a spill and/or a leak, always shut off any sources of ignition, ventilate the area, and excercise caution. | |
| Emergency procedures: Methods and materials for containmen Dike far ahead of liquid spill for later disp Environmental precautions: | Wear protective clothing, gloves and eye protection. In case of a spill and/or a leak, always shut off any sources of ignition, ventilate the area, and excercise caution. In case of a spill and/or a leak, always shut off any sources of ignition, ventilate the area, and excercise caution. | |
| Emergency procedures: Methods and materials for containment Dike far ahead of liquid spill for later disp Environmental precautions: Prevent entry into sewers, basements or 7. HANDLING AND STORAGE Precautions for safe handling: | Wear protective clothing, gloves and eye protection. In case of a spill and/or a leak, always shut off any sources of ignition, ventilate the area, and excercise caution. Int and cleaning up: posal. confined areas. Provide appropriate exhaust ventilation at places where dust is formed. Normal measures for preventive fire protection. Follow safe industrial hygiene practices and always wear proper protective equipment when handling this compound. | |
| Emergency procedures: Methods and materials for containment Dike far ahead of liquid spill for later disp Environmental precautions: Prevent entry into sewers, basements or 7. HANDLING AND STORAGE Precautions for safe handling: Conditions for safe storage: | Wear protective clothing, gloves and eye protection. In case of a spill and/or a leak, always shut off any sources of ignition, ventilate the area, and excercise caution. Int and cleaning up: posal. confined areas. Provide appropriate exhaust ventilation at places where dust is formed. Normal measures for preventive fire protection. Follow safe industrial hygiene practices and always wear proper protective equipment when | |
| Emergency procedures: Methods and materials for containment Dike far ahead of liquid spill for later disp Environmental precautions: Prevent entry into sewers, basements or 7. HANDLING AND STORAGE Precautions for safe handling: Conditions for safe storage: Storage incompatibilities: | Wear protective clothing, gloves and eye protection. In case of a spill and/or a leak, always shut off any sources of ignition, ventilate the area, and excercise caution. In tand cleaning up: In tand cleaning up: In | |
| Emergency procedures: Methods and materials for containment Dike far ahead of liquid spill for later disp Environmental precautions: Prevent entry into sewers, basements or 7. HANDLING AND STORAGE Precautions for safe handling: Conditions for safe storage: Storage incompatibilities: 8. EXPOSURE CONTROLS / PERS | Wear protective clothing, gloves and eye protection. In case of a spill and/or a leak, always shut off any sources of ignition, ventilate the area, and excercise caution. In tand cleaning up: In tand cleaning up: In | |
| Emergency procedures: Methods and materials for containment Dike far ahead of liquid spill for later disp Environmental precautions: Prevent entry into sewers, basements or 7. HANDLING AND STORAGE Precautions for safe handling: Conditions for safe storage: Storage incompatibilities: 8. EXPOSURE CONTROLS / PERS Exposure limits: Good general ventilation should be suffice | Wear protective clothing, gloves and eye protection. In case of a spill and/or a leak, always shut off any sources of ignition, ventilate the area, and excercise caution. In case of a spill and/or a leak, always shut off any sources of ignition, ventilate the area, and excercise caution. In case of a spill and/or a leak, always shut off any sources of ignition, ventilate the area, and excercise caution. In case of a spill and/or a leak, always shut off any sources of ignition, ventilate the area, and excercise caution. In case of a spill and/or a leak, always shut off any sources of ignition, ventilate the area, and excercise caution. In case of a spill and/or a leak, always shut off any sources of ignition, ventilate the area, and excercise caution. In case of a spill and/or a leak, always shut off any sources of ignition, ventilate the area, and excercise caution. In case of a spill and/or a leak, always shut off any sources of ignition, ventilate the area, and excercise caution. In case of a spill and/or a leak, always shut off any sources of ignition, ventilated place. In confined areas. Provide appropriate exhaust ventilation at places where dust is formed. Normal measures for preventive fire protection. Follow safe industrial hygiene practices and always wear proper protective equipment when handling this compound. Keep container tightly closed in a dry and well-ventilated place. Store away from oxidizing agents SONAL PROTECTION | |
| Emergency procedures: Methods and materials for containment Dike far ahead of liquid spill for later disp Environmental precautions: Prevent entry into sewers, basements or 7. HANDLING AND STORAGE Precautions for safe handling: Conditions for safe storage: Storage incompatibilities: 8. EXPOSURE CONTROLS / PERS Exposure limits: Good general ventilation should be suffice | Wear protective clothing, gloves and eye protection. In case of a spill and/or a leak, always shut off any sources of ignition, ventilate the area, and excercise caution. In case of a spill and/or a leak, always shut off any sources of ignition, ventilate the area, and excercise caution. In case of a spill and/or a leak, always shut off any sources of ignition, ventilate the area, and excercise caution. In case of a spill and/or a leak, always shut off any sources of ignition, ventilate the area, and excercise caution. In case of a spill and/or a leak, always shut off any sources of ignition, ventilate the area, and excercise caution. In case of a spill and/or a leak, always shut off any sources of ignition, ventilate the area, and excercise caution. In case of a spill and/or a leak, always shut off any sources of ignition, ventilate the area, and excercise caution. In case of a spill and/or a leak, always shut off any sources of ignition, ventilated the area, and excercise caution. In confined areas. Provide appropriate exhaust ventilation at places where dust is formed. Normal measures for preventive fire protection. Follow safe industrial hygiene practices and always wear proper protective equipment when handling this compound. Keep container tightly closed in a dry and well-ventilated place. Store away from oxidizing agents SONAL PROTECTION No data available cient to control airborne levels. Eyewash fountains should be provided in areas where there is any possibility that | |

9. PHYSICAL AND CHEMICAL PROPERTIES

| Physical state (20°C): Form: Color: Odor: Odor threshold: | Solid Crystal - Powder Pale yellow - Yellow red No data available No data available | | |
|--|---|--|--|
| Melting point/freezing point: Boiling point/range: Decomposition temperature: Relative density: Kinematic Viscosity: | 95°C (203°F) 355°C (671°F) No data available No data available No data available | pH: Vapor pressure: Vapor density: Dynamic Viscosity: | No data available No data available No data available No data available |
| Partition coefficient: n-octanol/water (log Pow) | No data available | Evaporation rate: (Butyl Acetate = 1) | No data available |
| Flash point: Flammability (solid, gas): | No data available No data available | Autoignition tempe Flammability or exp Lower: Upper: | |

Solubility(ies):

10. STABILITY AND REACTIVITY

Reactivity: Chemical Stability: Possibility of Hazardous Reactions: Conditions to avoid: Incompatible materials: Hazardous Decomposition Products: Not Available. Stable under recommended storage conditions. (See Section 7) No hazardous reactivity has been reported. Avoid excessive heat and light. Oxidizing agents No data available

11. TOXICOLOGICAL INFORMATION

Acute Toxicity: No data available

Skin corrosion/irritation: No data available

Serious eye damage/irritation: No data available

Respiratory or skin sensitization: No data available

Germ cell mutagenicity: No data available

Carcinogenicity:

No data available

IARC: No data available

Reproductive toxicity:

No data available

Routes of Exposure: Symptoms related to exposure: Inhalation, Eye contact, Ingestion.

No specific information is available in our data base regarding the toxic effects of this material for humans. However, exposure to any chemical should be kept to a minimum. Always follow safe industrial hygiene practices and wear proper protective equipment when handling this compound. **Potential Health Effects:**

No data available

OSHA:

No data available

No specific information available; skin and eye contact may result in irritation. May be harmful if inhaled or ingested.

NTP:

TCI AMERICA

Target organ(s):

12. ECOLOGICAL INFORMATION

No data available

Ecotoxicity Fish: No data available Crustacea: No data available No data available Algae: Persistence and degradability: No data available Bioaccumulative potential (BCF): No data available No data available Mobillity in soil: Partition coefficient: No data available n-octanol/water (log Pow) Soil adsorption (Koc): No data available No data available Henry's Law: constant (PaM3/mol) 13. DISPOSAL CONSIDERATIONS Recycle to process if possible. It is the generator's responsibility to comply with Federal, State and Local **Disposal of product:** rules and regulations. You may be able to dissolve or mix material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber system. This section is intended to provide assistance but does not replace these laws, nor does compliance in accordance with this section ensure regulatory compliance according to the law. US EPA guidelines for Identification and Listing of Hazardous Waste are listed in 40 CFR Parts 261. **Disposal of container:** Dispose of as unused product. Other considerations: Observe all federal, state and local regulations when disposing of the substance. 14. TRANSPORT INFORMATION DOT (US) Non-hazardous for transportation. Non-hazardous for transportation. ΙΑΤΑ

IMDG Non-hazardous for transportation.

15. REGULATORY INFORMATION

Toxic Substance Control Act (TSCA 8b.):

This product is NOT on the EPA Toxic Substances Control Act (TSCA) inventory. The following notices are required by 40 CFR 720.36 (C) for those products not on the inventory list:

(i) These products are supplied solely for use in research and development by or under the supervision of a technically qualified individual as defined in 40 CFR 720.0 et sec.

(ii) The health risks of these products have not been fully determined. Any information that is or becomes available will be supplied on a SDS sheet.

US Federal Regulations

| CERCLA Hazardous substance | and Reportable Quantity: |
|-----------------------------------|--------------------------|
| SARA 313: | Not Listed |
| SARA 302: | Not Listed |

State Regulations

State Right-to-Know

| Massachusetts | Not Listed |
|----------------------------|------------|
| New Jersey | Not Listed |
| Pennsylvania | Not Listed |
| California Proposition 65: | Not Listed |

Other Information

TCI AMERICA

| | Health: | 0 | |
|--------------------|---------------------------------|--|--|
| | Flammability: | 0 | |
| | Physical: | 0 | |
| | | | |
| No data available. | | | |
| | No data available. 236-178-3 | Flammability: Physical: No data available. | Flammability: 0 Physical: 0 No data available. |

Revision date: 10/06/2014

Revision number: 2

TCI chemicals are for research purposes only and are NOT intended for use as drugs, food additives, households, or pesticides. The information herein is believed to be correct, but does not claim to be all inclusive and should be used only as a guide. Neither the above named supplier nor any of its affiliates or subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All chemical reagents must be handled with the recognition that their chemical, physiological, toxicological, and hazardous properties have not been fully investigated or determined. All chemical reagents should be handled only by individuals who are familiar with their potential hazards and who have been fully trained in proper safety, laboratory, and chemical handling procedures. Although certain hazards are described herein, we can not guarantee that these are the only hazards which exist. Our SDS are based only on data available at the time of shipping and are subject to change without notice as new information is obtained. Avoid long storage periods since the product is subject to degradation with age and may become more dangerous or hazardous. It is the responsibility of the user to request updated SDS for products that are stored for extended periods. Disposal of unused product must be undertaken by qualified personnel who are knowledgeable in all applicable regulations and follow all pertinent safety precautions including the use of appropriate protective equipment (e.g. protective goggles, protective clothing, breathing equipment, face mask, fume hood). For proper handling and disposal, always comply with federal, state and local regulations.