OTTO CHEMIE PVT LTD

201, 51-53 Maroo Bhavan, Kalbadevi, Mumbai – 400002, India. Tel : + 91 22 2207 0099 / 6638 2599 Email : info@ottokemi.com, Web : www.ottokemi.com

-----ISO 9001: 2015------

MATERIAL SAFETY DATA SHEET

1.Identification 1.1GHS Product identifier Butyl lactate Code B 2388

2.Hazard identification

2.1Classification of the substance or mixture

Skin irritation, Category 2 Eye irritation, Category 2

2.2GHS label elements, including precautionary statements

Pictogram(s)

Signal word Warning

Hazard statement(s) H315 Causes skin irritation

H319 Causes serious eye irritation

Precautionary statement(s)
Prevention

Prevention P264 Wash ... thoroughly after handling.

P280 Wear protective gloves/protective clothing/eye

protection/face protection.

Response P302+P352 IF ON SKIN: Wash with plenty of water/...

P321 Specific treatment (see ... on this label).

P332+P313 If skin irritation occurs: Get medical advice/attention. P362+P364 Take off contaminated clothing and wash it before reuse.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to

do. Continue rinsing.

P337+P313 If eye irritation persists: Get medical advice/attention.

Storage none Disposal none

2.30ther hazards which do not result in classification

none

3. Composition/information on ingredients

3.1Substances

| Chemical name | Common names and synonyms | CAS number | EC number | Concentration |
|---------------|---------------------------|------------|-----------|---------------|
| Butyl lactate | Butyl lactate | 138-22-7 | none | 100% |

4.First-aid measures

4.1Description of necessary first-aid measures

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact

Wash off with soap and plenty of water. Consult a physician.

In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2Most important symptoms/effects, acute and delayed

VAPOR: Headache, coughing, possible sleepiness, nausea or vomiting, or dizziness may result. LIQUID: Irritating to skin and eyes. (USCG, 1999)

4.3Indication of immediate medical attention and special treatment needed, if necessary

/SRP:/ Immediate first aid: Ensure that adequate decontamination has been carried out. If patient is not breathing, start artificial respiration, preferably with a demand-valve resuscitator, bag-valve-mask device, or pocket mask, as trained. Perform CPR as necessary. Immediately flush contaminated eyes with gently flowing water. Do not induce vomiting. If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain an open airway and prevent aspiration. Keep patient quiet and maintain normal body temperature. Obtain medical attention. /Organic acids and related compounds/

5. Fire-fighting measures

5.1Extinguishing media

Suitable extinguishing media

Extinguishing methods: Alcohol Foam

5.2Specific hazards arising from the chemical

Combustible. Extinguish with dry chemical, CO2, or alcohol foam. Use water spray to "knock down" vapors and cool exposed containers. (USCG, 1999)

5.3Special protective actions for fire-fighters

Wear self-contained breathing apparatus for firefighting if necessary.

6.Accidental release measures

6.1Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation.

Evacuate personnel to safe areas. Avoid breathing dust. For personal protection see section 8.

6.2Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided. 6.3Methods and materials for containment and cleaning up

Personal precautions: Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Environmental precautions: Do not let product enter drains. Methods and materials for containment and cleaning up: Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

7. Handling and storage

7.1Precautions for safe handling

Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Avoid exposure - obtain special instructions before use. Provide appropriate exhaust ventilation at places where dust is formed. For precautions see section 2.2. 7.2Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a dry and well-ventilated place.

8. Exposure controls/personal protection

8.1Control parameters

Occupational Exposure limit values

Recommended Exposure Limit: 10 Hour Time-Weighted Average: 5 ppm (25 mg/cu m)

Biological limit values

no data available

8.2Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday. 8.3Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection

Safety glasses with side-shields conforming to EN166. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection

Wear impervious clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace. Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique(without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Respiratory protection

Wear dust mask when handling large quantities.

Thermal hazards no data available

9. Physical and chemical properties

Physical state A clear colorless liquid with a mild odor.

Colour Water-white, stable liquid Odour Mild, transient odor Melting point/ freezing point 298\u00b0C(lit.)
Boiling point or initial boiling 187\u00b0C

point and boiling range

Flammability Class IIIA Combustible Liquid: Fl.P. at or above 60\u00b0C and

below 93.33\u00b0C.

Lower and upper explosion no data available

limit / flammability limit

Flash point 91\u00b0C(lit.)

Auto-ignition temperature 382\u00b0C (720 deg F)

Decomposition temperature no data available рΗ no data available Kinematic viscosity no data available

Solubility In water:42 g/L (25 \u00baC)

Partition coefficient nlog Kow = 0.80 (est)

octanol/water (log value)

Vapour pressure 0.4 mm Hg (20 \u00b0C)

Density and/or relative 0.98

density

Relative vapour density 5.04 (vs air) Particle characteristics no data available

10.Stability and reactivity

10.1Reactivity no data available 10.2Chemical stability

Stable under recommended storage conditions.

10.3Possibility of hazardous reactions

Flammable when exposed to heat or flameBUTYL LACTATE is an ester. Esters react with acids to liberate heat along with alcohols and acids. Strong oxidizing acids may cause a vigorous reaction that is sufficiently exothermic to ignite the reaction products. Heat is also generated by the interaction of esters with caustic solutions. Flammable hydrogen is generated by mixing esters with alkali metals and hydrides. Avoid contact with strong oxidizing agents and strong bases. Will not polymerize (USCG, 1999).

10.4Conditions to avoid

no data available

10.5Incompatible materials

Strong acids & bases, strong oxidizers, heat, sparks, open flames.

10.6Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Carbon oxides.

11.Toxicological information

Acute toxicity

Oral: no data available Inhalation: no data available Dermal: 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

Reproductive toxicity

no data available STOT-single exposure

no data available STOT-repeated exposure

no data available

Aspiration hazard

no data available

12. Ecological information

12.1Toxicity

Toxicity to fish: no data available

Toxicity to daphnia and other aquatic invertebrates: EC50; Species: Daphnia magna (Water Flea); Conditions: freshwater, static; Concentration: 320000 ug/L for 48 hr (95% confidence interval: 320000-399000 ug/L); Effect: intoxication, decreased mobility /formulation, 97% purity

Toxicity to algae: EC50; Species: Pseudokirchneriella subcapitata (Green Algae, 1x10+4 cells/mL); Conditions: freshwater, static, 20\u00b0C, pH 8.0; Concentration: 329000 ug/L for 72-96 hr; Effect: decreased population biomass /formulation, 97% purity Toxicity to microorganisms: no data available

12.2Persistence and degradability

AEROBIC: n-Butyl lactate, present at 1.53, 2.0 and 2.08 mg/L, exhibited degradation of 22, 39, and 25%, respectively, in 5 days using an activated sludge inoculum in the Closed Bottle test. The percent degradation was 57, 63 and 69 after 28, 20 and 28 days respectively(1).

12.3Bioaccumulative potential

An estimated BCF of 3 was calculated in fish for n-butyl lacate(SRC), using an estimated log Kow of 0.80(1) and a regressionderived equation(2). According to a classification scheme(3), this BCF suggests the potential for bioconcentration in aquatic organisms is low(SRC).

12.4Mobility in soil

Using a structure estimation method based on molecular connectivity indices(1), the Koc of n-butyl lactate can be estimated to be 10(SRC). According to a classification scheme(2), this estimated Koc value suggests that n-butyl lactate is expected to have very high mobility in soil.

12.5Other adverse effects

no data available

13.Disposal considerations

13.1Disposal methods

Product

The material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems. Contaminated packaging

Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning. Alternatively, the packaging can be punctured to make it unusable for other purposes and then be disposed of in a sanitary landfill. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.

14. Transport information

14.1UN Number

ADR/RID: UN3295 IMDG: UN3295 IATA: UN3295

14.2UN Proper Shipping Name

ADR/RID: HYDROCARBONS, LIQUID, N.O.S. IMDG: HYDROCARBONS, LIQUID, N.O.S. IATA: HYDROCARBONS, LIQUID, N.O.S.

14.3Transport hazard class(es)

ADR/RID: 3 IMDG: 3 IATA: 3

14.4Packing group, if applicable

ADR/RID: II IMDG: II IATA: II

14.5Environmental hazards

ADR/RID: no IMDG: no IATA: no

14.6Special precautions for user

no data available

14.7Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code no data available

15.Regulatory information

15.1Safety, health and environmental regulations specific for the product in question

| Chemical name | Common names and synonyms | CAS number | EC number |
|-----------------------|---------------------------|------------|-----------|
| Butyl lactate | Butyl lactate | 138-22-7 | none |
| European Inventory of | Listed. | | |
| EC Inventory | Listed. | | |
| United States Toxic S | Listed. | | |
| China Catalog of Haz | Not Listed. | | |
| New Zealand Invento | Listed. | | |
| Philippines Inventory | Listed. | | |
| Vietnam National Che | Not Listed. | | |
| Chinese Chemical In | Listed. | | |

Section 16: Other Information

This safety data sheet should be used in conjunction with technical sheets. It does not replace them. The information given is based on our knowledge of this product, at the time of publication. It is given in good faith. The attention of the user is drawn to the possible risks incurred by using the product for any other purpose other than that for which it was intended. This does not in any way excuse the user from knowing and applying all the regulations governing his activity. It is the sole responsibility of the user to take all precautions required in handling the product. The aim of the mandatory regulations mentioned is to help the user to fulfill his obligations regarding the use of hazardous products.