SAFETY DATA SHEET

n-Butyraldehyde
10450

Version / Revision 5
Supersedes Version 4.02
Revision Date 05-May-2020
Issuing Date 15-May-2020

SECTION 1: Identification

1.1. Product identifier

Identification of the substance/preparation n-Butyraldehyde

CAS-No 123-72-8

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

Use of the Substance / Preparation Intermediate
Uses advised against None

1.3. Details of the supplier of the safety data sheet

Supplier OQ Chemicals Corporation
15375 Memorial Drive
West Memorial Place I
Suite 300
Houston, TX 77079
USA
Phone +1 346 378 7300

Product Information Product Stewardship
FAX: +49 (0)208 693 2053
email: sc.psq@oq.com

1.4. Emergency telephone number

Emergency telephone number NCEC +1 202 464 2554
available 24/7

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

This substance is classified in accordance with paragraph (d) of §1910.1200 (GHS-US classification).

Serious eye damage/eye irritation Category 2A, H319
Flammable liquid Category 2, H225
Environmental hazard Aquatic Acute 3; H402

OSHA Specified Hazards Not applicable.
2.2. Label elements

Labeling according to §1910.1200 (GHS-US labeling).

Hazard symbol(s)

[Image of hazard symbols]

Signal word  Danger

Hazard statements  H225: Highly flammable liquid and vapor.
H319: Causes serious eye irritation.
H402: Harmful to aquatic life

Precautionary statements

Prevention  P210: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233: Keep container tightly closed.
P240: Ground and bond container and receiving equipment.
P241: Use explosion-proof electrical/ ventilating/ lighting equipment.
P242: Use non-sparking tools.
P243: Take action to prevent static discharges.
P264: Wash hands thoroughly after handling.
P273: Avoid release to the environment.
P280: Wear protective gloves/eye protection/face protection.

Response  P303 + P361 + P353: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
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  P403 + P235: Store in a well ventilated place. Keep cool.

Disposal  P501: Dispose of contents/container in accordance with local regulation.

2.3. Other hazards

Vapour is heavier than air and can travel considerable distance to a source of ignition and flashback
Vapours may form explosive mixture with air
Potential for exothermic hazard
Risk of receptacle bursting
Auto ignition on large surfaces
Components of the product may be absorbed into the body by inhalation and ingestion

SECTION 3: Composition / information on ingredients

3.1. Substances

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No</th>
<th>Concentration (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Butyraldehyde</td>
<td>123-72-8</td>
<td>&gt; 98,7</td>
</tr>
</tbody>
</table>

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation
Keep at rest. Aerate with fresh air. When symptoms persist or in all cases of doubt seek medical advice.

Skin
Wash off immediately with soap and plenty of water. When symptoms persist or in all cases of doubt seek medical advice.

Eyes
Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses. Obtain medical attention.

Ingestion
Do not induce vomiting without medical advice. Call a physician immediately.

4.2. Most important symptoms and effects, both acute and delayed

Main symptoms
shortness of breath.

Special hazard
Lung oedema.

4.3. Indication of any immediate medical attention and special treatment needed

General advice
Remove contaminated, soaked clothing immediately and dispose of safely. First aider needs to protect himself.


SECTION 5: Firefighting measures

5.1. Extinguishing media

Emergency telephone number
NCEC +1 202 464 2554
USA (A-US)
n-Butyraldehyde
10450

Suitable extinguishing media
alcohol-resistant foam, dry chemical, carbon dioxide (CO2), water spray

Unsuitable Extinguishing Media
Do not use a solid water stream as it may scatter and spread fire.

5.2. Special hazards arising from the substance or mixture
Under conditions giving incomplete combustion, hazardous gases produced may consist of:
carbon monoxide (CO)
carbon dioxide (CO2)
Combustion gases of organic materials must in principle be graded as inhalation poisons
Vapour is heavier than air and can travel considerable distance to a source of ignition and flashback
Vapours may form explosive mixture with air
Risk of receptacle bursting

5.3. Advice for firefighters
Special protective equipment for firefighters
Fire fighter protection should include a self-contained breathing apparatus (NIOSH-approved or EN 133) and full
fire-fighting turn out gear.
Precautions for firefighting
Cool containers / tanks with water spray. Dike and collect water used to fight fire. Keep people away from and upwind
of fire.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures
For non-emergency personnel: For personal protective equipment see section 8. Avoid contact with skin and eyes.
Avoid breathing vapors or mists. Keep people away from and upwind of spill/leak. Ensure adequate ventilation,
especially in confined areas. Keep away from heat and sources of ignition.
For emergency responders: Personal protection see section 8.

6.2. Environmental precautions
Prevent further leakage or spillage. Do not discharge product into the aquatic environment without pretreatment
(biological treatment plant).

6.3. Methods and material for containment and cleaning up
Methods for containment
Stop the flow of material, if possible without risk. Dike spilled material, where this is possible.

Methods for cleaning up
Soak up with inert absorbent material. DO NOT use combustible materials such as sawdust. Keep in suitable, closed
containers for disposal. If liquid has been spilt in large quantities clean up promptly by scoop or vacuum. Take
necessary action to avoid static electricity discharge (which might cause ignition of organic vapours).

6.4. Reference to other sections

For personal protective equipment see section 8.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling
Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product. Provide sufficient air exchange and/or exhaust in work rooms. Refill and handle product only in closed system.

Hygiene measures
When using, do not eat, drink or smoke. Take off all contaminated clothing immediately. Wash hands before breaks and immediately after handling the product.

Advice on the protection of the environment
See Section 8: Environmental exposure controls.

Incompatible products
acids and bases
amines
oxidizing agents

7.2. Conditions for safe storage, including any incompatibilities

Advice on protection against fire and explosion
Keep away from sources of ignition - No smoking. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapours). In case of fire, emergency cooling with water spray should be available. Ground and bond containers when transferring material. Vapour is heavier than air and can travel considerable distance to a source of ignition and flashback. Vapours may form explosive mixture with air.

Technical measures/Storage conditions
Keep containers tightly closed in a cool, well-ventilated place. Handle and open container with care. Handle under nitrogen, protect from moisture. Store at temperatures not exceeding 30 °C/ 86 °F.

Suitable material
stainless steel, aluminium

Unsuitable material
mild steel

SECTION 8: Exposure controls / personal protection

8.1. Control parameters

Exposure limits United States of America
No exposure limits established regarding ACGIH, OSHA Z-1 and OSHA Z-2.

8.2. Exposure controls

Appropriate Engineering controls
General or dilution ventilation is frequently insufficient as the sole means of controlling employee exposure. Local ventilation is usually preferred. Explosion-proof equipment (for example fans, switches, and grounded ducts) should be used in mechanical ventilation systems.

Individual protection measures, such as personal protective equipment

General industrial hygiene practice
Avoid contact with skin, eyes and clothing. Do not breathe vapours or spray mist. Ensure that eyewash stations and safety showers are close to the workstation location.

Hygiene measures
When using, do not eat, drink or smoke. Take off all contaminated clothing immediately. Wash hands before breaks and immediately after handling the product.

Eye protection
Tightly fitting safety goggles. In addition to goggles, wear a face shield if there is a reasonable chance for splash to the face.

Hand protection
Wear protective gloves. Recommendations are listed below. Other protective material may be used, depending on the situation, if adequate degradation and permeation data is available. If other chemicals are used in conjunction with this chemical, material selection should be based on protection for all chemicals present.

<table>
<thead>
<tr>
<th>Suitable material</th>
<th>Evaluation</th>
<th>Glove thickness</th>
<th>Break through time</th>
</tr>
</thead>
<tbody>
<tr>
<td>butyl-rubber</td>
<td>according to EN 374: level 3</td>
<td>approx 0.3 mm</td>
<td>&lt; 60 min</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Suitable material</th>
<th>Evaluation</th>
<th>Glove thickness</th>
</tr>
</thead>
<tbody>
<tr>
<td>polyvinylchloride</td>
<td>Information derived from practical experience</td>
<td>approx 0.8 mm</td>
</tr>
</tbody>
</table>

Skin and body protection
Impervious clothing. Wear face-shield and protective suit for abnormal processing problems.

Respiratory protection
Respirator with filter for organic vapour. Use the indicated respiratory protection if the occupational exposure limit is exceeded and/or in case of product release (dust). Equipment should conform to NIOSH.

Environmental exposure controls
If possible use in closed systems. If leakage can not be prevented, the substance needs to be suck off at the emersion point, if possible without danger. Observe the exposure limits, clean exhaust air if needed. If recycling is not practicable, dispose of in compliance with local regulations. Inform the responsible authorities in case of leakage into...
the atmosphere, or of entry into waterways, soil or drains.

**SECTION 9: Physical and chemical properties**

### 9.1. Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>liquid</td>
<td></td>
</tr>
<tr>
<td>Colour</td>
<td>colourless</td>
<td></td>
</tr>
<tr>
<td>Odour</td>
<td>pungent</td>
<td></td>
</tr>
<tr>
<td>Odour threshold</td>
<td>No data available</td>
<td></td>
</tr>
<tr>
<td>pH</td>
<td>3 (50 g/l in water @ 20 °C (68 °F)) OECD 105</td>
<td></td>
</tr>
<tr>
<td>Melting point/range</td>
<td>&lt; 4 °F (&lt; -20 °C) @ 1013 hPa</td>
<td></td>
</tr>
<tr>
<td>Boiling point/range</td>
<td>167 °F (75 °C) @ 1 atm (101,3 kPa) OECD 103</td>
<td></td>
</tr>
<tr>
<td>Flash point</td>
<td>20 °F (-6.7 °C) @ 1013 hPa</td>
<td>closed cup, ASTM D-93</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>7,8 (n-Butyl acetate = 1)</td>
<td></td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Does not apply, the substance is a liquid</td>
<td></td>
</tr>
<tr>
<td>Lower explosion limit</td>
<td>1,7 Vol %</td>
<td></td>
</tr>
<tr>
<td>Upper explosion limit</td>
<td>12,5 Vol %</td>
<td></td>
</tr>
<tr>
<td>Vapour pressure</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Values [hPa]</td>
<td>144</td>
<td>0,142</td>
</tr>
<tr>
<td>Vapour density</td>
<td>2,5 (Air = 1) @ 20 °C (68 °F)</td>
<td></td>
</tr>
<tr>
<td>Relative density</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Values</td>
<td>0,81</td>
<td>20</td>
</tr>
<tr>
<td>Solubility</td>
<td>No data available</td>
<td></td>
</tr>
<tr>
<td>Water solubility</td>
<td>50 g/l @ 68 °F (20 °C) OECD 105</td>
<td></td>
</tr>
<tr>
<td>log Pow</td>
<td>1,3 @ 20 °C (68 °F) OECD 107</td>
<td></td>
</tr>
<tr>
<td>Autoignition temperature</td>
<td>374 °F (190 °C) @ 1013 hPa</td>
<td>ASTM E 659</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>No data available</td>
<td></td>
</tr>
<tr>
<td>Viscosity</td>
<td>0,43 mPa*s @ 68 °F (20 °C)</td>
<td>dynamic, ISO 3219</td>
</tr>
</tbody>
</table>

### 9.2. Other information

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Molecular weight</td>
<td>72,11</td>
</tr>
<tr>
<td>Molecular formula</td>
<td>C4 H8 O</td>
</tr>
<tr>
<td>Oxidizing properties</td>
<td>Does not apply, substance is not oxidising. There are no chemical groups associated with oxidizing properties</td>
</tr>
<tr>
<td>Refractive Index</td>
<td>1,379 @ 68 °F (20 °C)</td>
</tr>
<tr>
<td>Heat of combustion</td>
<td>2479 kJ/mol @ 25 °C (77 °F)</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>Does not apply, substance is not explosive. There are no chemical groups associated with explosive properties</td>
</tr>
<tr>
<td>Surface tension</td>
<td>70 mN/m (1 g/l @ 20°C (68°F)), OECD 115</td>
</tr>
</tbody>
</table>
SECTION 10: Stability and Reactivity

10.1. Reactivity
The reactivity of the product corresponds to the typical reactivity shown by the substance group as described in any text book on organic chemistry.

10.2. Chemical stability
Stable under recommended storage conditions.

10.3. Possibility of hazardous reactions
Hazardous polymerisation may occur. Polymerization is a highly exothermic reaction and may generate sufficient heat to cause thermal decomposition and/or rupture containers. May form explosive peroxides. When finely distributed, self-ignition is possible. Vapours may form explosive mixture with air. Auto ignition on large surfaces.

10.4. Conditions to avoid
Avoid contact with heat, sparks, open flame and static discharge. Avoid any source of ignition.

10.5. Incompatible materials
bases, amines, acids, oxidizing agents.

10.6. Hazardous decomposition products
No decomposition if stored and applied as directed.

SECTION 11: Toxicological information

11.1. Information on toxicological effects
Likely routes of exposure Ingestion, Inhalation, Eye contact, Skin contact

Butyraldehyde, CAS: 123-72-8
Main symptoms shortness of breath.
Target Organ Systemic Toxicant - Single exposure
Based on available data, the classification criteria are not met for: STOT SE
Target Organ Systemic Toxicant - Repeated exposure
Based on available data, the classification criteria are not met for: STOT RE

Acute toxicity
Butyraldehyde (123-72-8)
n-Butyraldehyde
10450

Routes of Exposure

<table>
<thead>
<tr>
<th>Endpoint</th>
<th>Values</th>
<th>Species</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral</td>
<td>LD50</td>
<td>&gt; 2000 mg/kg</td>
<td>rat</td>
</tr>
<tr>
<td>Dermal</td>
<td>LD50</td>
<td>&gt; 2000 mg/kg (4 h)</td>
<td>rabbit</td>
</tr>
<tr>
<td>Inhalative</td>
<td>LC50</td>
<td>&gt; 5.4 mg/l (4h)</td>
<td>rat</td>
</tr>
</tbody>
</table>

**Butyraldehyde, CAS: 123-72-8**

**Assessment**

Based on available data, the classification criteria are not met for:
- Acute oral toxicity
- Acute dermal toxicity
- Acute inhalation toxicity

**STOT SE**

**Irritation and corrosion**

**Butyraldehyde (123-72-8)**

<table>
<thead>
<tr>
<th>Target Organ Effects</th>
<th>Species</th>
<th>Result</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skin</td>
<td>rabbit</td>
<td>No skin irritation</td>
<td>OECD 404</td>
</tr>
<tr>
<td>Eyes</td>
<td>rabbit</td>
<td>irritating</td>
<td>84/449/EEC B.5</td>
</tr>
</tbody>
</table>

**Butyraldehyde, CAS: 123-72-8**

**Assessment**

The available data lead to the classification given in section 2
- For respiratory irritation, no data are available

**Sensitization**

**Butyraldehyde (123-72-8)**

<table>
<thead>
<tr>
<th>Target Organ Effects</th>
<th>Species</th>
<th>Evaluation</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skin</td>
<td>guinea pig</td>
<td>not sensitizing</td>
<td>OECD 406</td>
</tr>
</tbody>
</table>

**Butyraldehyde, CAS: 123-72-8**

**Assessment**

Based on available data, the classification criteria are not met for:
- Skin sensitization
- For respiratory sensitization, no data are available

**Subacute, subchronic and prolonged toxicity**

**Butyraldehyde (123-72-8)**

<table>
<thead>
<tr>
<th>Type</th>
<th>Dose</th>
<th>Species</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subchronic toxicity</td>
<td>LOAEL: 75 mg/kg/d (13 weeks)</td>
<td>rat, male/female</td>
<td>Oral</td>
</tr>
<tr>
<td>Subchronic toxicity</td>
<td>NOAEC: 0,15 mg/l/d (12 weeks)</td>
<td>rat</td>
<td>Inhalation</td>
</tr>
</tbody>
</table>

**Butyraldehyde, CAS: 123-72-8**

**Assessment**

Based on available data, the classification criteria are not met for:
- STOT RE

---

Emergency telephone number
NCEC +1 202 464 2554
USA (A-US)
### Carcinogenicity, Mutagenicity, Reproductive toxicity

#### n-Butyraldehyde (123-72-8)

<table>
<thead>
<tr>
<th>Type</th>
<th>Dose</th>
<th>Species</th>
<th>Evaluation</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mutagenicity</td>
<td></td>
<td>Salmonella typhimurium</td>
<td>negative</td>
<td>Ames test</td>
</tr>
<tr>
<td>Mutagenicity</td>
<td></td>
<td>V79 cells, Chinese hamster</td>
<td>positive</td>
<td>Gene mutations SLRL</td>
</tr>
<tr>
<td>Mutagenicity</td>
<td></td>
<td>CHO (Chinese Hamster Ovary) cells</td>
<td>negative</td>
<td>Chromosomal Aberration</td>
</tr>
<tr>
<td>Mutagenicity</td>
<td></td>
<td>CHO (Chinese Hamster Ovary) cells</td>
<td>positive</td>
<td>In-vitro Sister Chromatid Exchange (ECS)</td>
</tr>
<tr>
<td>Mutagenicity</td>
<td></td>
<td>CHO (Chinese Hamster Ovary) cells</td>
<td>negative</td>
<td>In-vitro Sister Chromatid Exchange (ECS)</td>
</tr>
<tr>
<td>Mutagenicity</td>
<td></td>
<td>human hepatocytes rat, hepatocytes</td>
<td>negative</td>
<td>DNA-damage</td>
</tr>
<tr>
<td>Mutagenicity</td>
<td></td>
<td>mouse Drosophila melanogaster</td>
<td>negative</td>
<td>Weight of evidence Gene mutations SLRL Chromosomal Aberration Micronucleus</td>
</tr>
<tr>
<td>Reproductive toxicity</td>
<td>LOAEC: 150 ppm</td>
<td>rat</td>
<td>rat, parental read across</td>
<td></td>
</tr>
<tr>
<td>Reproductive toxicity</td>
<td>NOAEC: 1500 ppm</td>
<td>rat</td>
<td>Reproductive toxicity: read across</td>
<td></td>
</tr>
<tr>
<td>Developmental Toxicity</td>
<td>NOAEC: 3 mg/l</td>
<td>rat</td>
<td>OECD 412 Maternal toxicity read across</td>
<td></td>
</tr>
<tr>
<td>Developmental Toxicity</td>
<td>NOAEC: 12 mg/l</td>
<td>rat</td>
<td>OECD 412 Developmental toxicity read across</td>
<td></td>
</tr>
<tr>
<td>Carcinogenicity</td>
<td>No data available</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Butyraldehyde, CAS: 123-72-8

**CMR Classification**

The available data on CMR properties are summarized in the table above. They do not indicate a classification into categories 1A or 1B.

**Evaluation**

- Did not show reprotoxic effects in animal experiments
- No cancer study was conducted

#### Butyraldehyde, CAS: 123-72-8

**Aspiration toxicity**

No data available
SAFETY DATA SHEET

n-Butyraldehyde
10450

Other adverse effects
Components of the product may be absorbed into the body by inhalation and ingestion.

Note
Handle in accordance with good industrial hygiene and safety practice. Further details on substance data can be found in the registration dossier under the following link:

SECTION 12: Ecological information

12.1. Toxicity

Acute aquatic toxicity

<table>
<thead>
<tr>
<th>Species</th>
<th>Exposure time</th>
<th>Dose</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daphnia magna (Water flea)</td>
<td>24h</td>
<td>EC50: 195 mg/l</td>
<td>DIN 38412, part 11</td>
</tr>
<tr>
<td>Pimephales promelas (fathead minnow)</td>
<td>96h</td>
<td>LC50: 25,8 mg/l</td>
<td>EPA-660/3-75-009</td>
</tr>
<tr>
<td>Pseudomonas putida</td>
<td>16 h</td>
<td>EC0: 100 mg/l (MIC)</td>
<td>DIN 38412, part 8</td>
</tr>
</tbody>
</table>

Long term toxicity

<table>
<thead>
<tr>
<th>Type</th>
<th>Species</th>
<th>Dose</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mortality</td>
<td>Poecilia reticulata (guppy)</td>
<td>LC50: 13,7 mg/l/14d</td>
<td>OECD 204</td>
</tr>
</tbody>
</table>

12.2. Persistence and degradability

Butyraldehyde, CAS: 123-72-8

Biodegradation
46 - 57 % (4-6 d), activated sludge, non-adapted, aerobic, OECD 301 C.

Abiotic Degradation

<table>
<thead>
<tr>
<th>Type</th>
<th>Result</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Photolysis</td>
<td>Half-life (DT50): 5 h</td>
<td>calculated SRC AOP v1.92</td>
</tr>
<tr>
<td>Hydrolysis</td>
<td>No data available</td>
<td></td>
</tr>
</tbody>
</table>

12.3. Bioaccumulative potential

<table>
<thead>
<tr>
<th>Butyraldehyde (123-72-8)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
</tr>
<tr>
<td>log Pow</td>
</tr>
<tr>
<td>BCF</td>
</tr>
</tbody>
</table>

12.4. Mobility in soil

Emergency telephone number
NCEC +1 202 464 2554
11 / 15
USA (A-US)
Butyraldehyde (123-72-8)

<table>
<thead>
<tr>
<th>Type</th>
<th>Result</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surface tension</td>
<td>70 mN/m (1 g/l @ 20°C (68°F))</td>
<td>OECD 115</td>
</tr>
<tr>
<td>Adsorption/Desorption</td>
<td>Koc: 5-71</td>
<td>calculated</td>
</tr>
<tr>
<td>Distribution to environmental compartments</td>
<td>no data available</td>
<td></td>
</tr>
</tbody>
</table>

12.5. Results of PBT and vPvB assessment

**Butyraldehyde, CAS: 123-72-8**

**PBT and vPvB assessment**

This substance is not considered to be persistent, bioaccumulating nor toxic (PBT), nor very persistent nor very bioaccumulating (vPvB)

12.6. Other adverse effects

**Butyraldehyde, CAS: 123-72-8**

No data available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

**Product Information**

Disposal required in compliance with all waste management related state and local regulations. The choice of the appropriate method of disposal depends on the product composition by the time of disposal as well as the local statutes and possibilities for disposal.

**Uncleaned empty packaging**

Contaminated packaging should be emptied as far as possible and after appropriate cleansing may be taken for reuse.

SECTION 14: Transport information

D.O.T. (49CFR)

14.1. UN number UN 1129
14.2. UN proper shipping name Butyraldehyde
14.3. Transport hazard class(es) 3
14.4. Packing group II
14.5. Environmental hazards no
14.6. Special precautions for user Emergency Response Guide 129
SAFETY DATA SHEET

n-Butyraldehyde
10450

ICAO-TI / IATA-DGR

14.1. UN number
UN 1129

14.2. UN proper shipping name
(Butyraldehyde)

14.3. Transport hazard class(es)
3

14.4. Packing group
II

14.5. Environmental hazards
no

14.6. Special precautions for user
no data available

IMDG

14.1. UN number
UN 1129

14.2. UN proper shipping name
(Butyraldehyde)

14.3. Transport hazard class(es)
3

14.4. Packing group
II

14.5. Environmental hazards
no

14.6. Special precautions for user
EmS

14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code
Product name
Butyraldehyde
Ship type
3
Pollution category
Y

SECTION 15: Regulatory information

Federal and State Regulations
Components of the product are listed in the quoted regulations. For details please refer to the regulations directly. This list is not exhaustive, please check for other applicable regulations.

Federal Regulations
This product is listed on the TSCA inventory

Section 313 Supplier Notification
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:

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No</th>
<th>Concentration (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Butyraldehyde</td>
<td>123-72-8</td>
<td>&gt; 98,7</td>
</tr>
</tbody>
</table>

This information must be included in all SDSs that are copied and distributed for this material.

Butyraldehyde, CAS: 123-72-8

Emergency telephone number
NCEC +1 202 464 2554
USA (A-US)
SAFETY DATA SHEET

n-Butyraldehyde
10450

CERCLA Hazardous Substance
CERCLA RQ 100 LBS
EPCRA SARA Title III 313
de minimis concentration 1.0 %

State Regulations

Butyraldehyde, CAS: 123-72-8
IL Chemical Safety Act
MA Hazardous Substances List
MA RTK List
MN Hazardous Substances List
NJ RTK List
NY RTK List
PA RTK List
RI RTK List

International Inventories

Butyraldehyde, CAS: 123-72-8
AICS (AU)
DSL (CA)
IECSC (CN)
EC-No. 2046466 (EU)
ENCS (2)-494 (JP)
ISHL (2)-494 (JP)
KECI KE-03746 (KR)
INSQ (MX)
PICCS (PH)
TSCA (US)
NZIoC (NZ)
TCSI (TW)

SECTION 16: Other information

Revision Date 05-May-2020
Issuing date 15-May-2020

Hazard Rating Systems

NFPA (National Fire Protection Association)
Health Hazard 3
Fire Hazard 3
Reactivity 2

HMIS (Hazardous Material Information System)
Health Hazard 3
Flammability 3
Physical Hazard 0

Training advice

Emergency telephone number
NCEC +1 202 464 2554
USA (A-US)
For effective first-aid, special training / education is needed.

**Sources of key data used to compile the datasheet**
Information contained in this safety data sheet is based on OQ owned data and public sources deemed valid or acceptable. The absence of data elements required by OSHA, ANSI or Annex II, Regulation 1907/2006/EC indicates, that no data meeting these requirements is available.

**Further information for the safety data sheet**
Changes against the previous version are marked by ***. Observe national and local legal requirements. For more information, other material safety data sheets or technical data sheets please consult the OQ homepage (www.chemicals.oq.com).
The use of a comma in section 3 and section 7 to 12 is the same as a period.

**Disclaimer**
*For industrial use only.* The information contained herein is accurate to the best of our knowledge. We do not suggest or guarantee that any hazards listed herein are the only ones which exist. OQ makes no warranty of any kind, express or implied, concerning the safe use of this material in your process or in combination with other substances. User has the sole responsibility to determine the suitability of the materials for any use and the manner of use contemplated. User must meet all applicable safety and health standards.

**End of Safety Data Sheet**