

n-Butyl Chloride (034)**000000011399**

Version 1.4

Revision Date 03/17/2014

Print Date 09/09/2014

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : n-Butyl Chloride (034)

MSDS Number : 000000011399

Product Use Description : Solvent

Manufacturer or supplier's details : Honeywell International Inc.
101 Columbia Road
Morristown, NJ 07962-1057

For more information call : 1-800-368-0050
+1-231-726-3171
(Monday-Friday, 9:00am-5:00pm)

In case of emergency call : Medical: 1-800-498-5701 or +1-303-389-1414
: Transportation (CHEMTREC): 1-800-424-9300 or +1-703-527-3887
:
: (24 hours/day, 7 days/week)

SECTION 2. HAZARDS IDENTIFICATION**Emergency Overview**

Form : liquid

Color : clear colourless

Odor : unpleasant

Classification of the substance or mixture

Classification of the substance or mixture : Flammable liquids, Category 2

GHS Label elements, including precautionary statements

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Symbol(s)

:



Signal word

: Danger

Hazard statements

: Highly flammable liquid and vapour.

Precautionary statements

: **Prevention:**

Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

Keep container tightly closed.

Ground/bond container and receiving equipment.

Use explosion-proof electrical/ ventilating/ lighting/ equipment.

Use only non-sparking tools.

Take precautionary measures against static discharge.

Wear eye/face protection.

Response:

IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.

In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.

Storage:

Store in a well-ventilated place. Keep cool.

Disposal:

Dispose of contents/ container to an approved waste disposal plant.

Hazards not otherwise classified

: May cause eye and skin irritation.

Carcinogenicity

No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP, IARC, or OSHA.

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SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical nature : Substance

Chemical Name	CAS-No.	Concentration
n-Butyl Chloride	109-69-3	100.00 %

SECTION 4. FIRST AID MEASURES

- Inhalation : Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Use oxygen as required, provided a qualified operator is present. Call a physician.
- Skin contact : Wash off immediately with plenty of water for at least 15 minutes. Take off contaminated clothing and shoes immediately. Wash contaminated clothing before re-use. Call a physician.
- Eye contact : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Call a physician.
- Ingestion : Do not induce vomiting without medical advice. Immediate medical attention is required. Never give anything by mouth to an unconscious person. Call a physician.

Notes to physician

Treatment : Treat symptomatically.

SECTION 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Dry chemical
Foam
Carbon dioxide (CO₂)
Cool closed containers exposed to fire with water spray.
- Unsuitable extinguishing : Do not use a solid water stream as it may scatter and spread

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media

fire.

Specific hazards during firefighting

: Extremely flammable.
Vapours may form explosive mixtures with air.
Vapours are heavier than air and may spread along floors.
Vapors may travel to areas away from work site before igniting/flashing back to vapor source.
In case of fire hazardous decomposition products may be produced such as:
Carbon monoxide
Carbon dioxide (CO₂)
Phosgene
Gaseous hydrogen chloride (HCl).

Special protective equipment for firefighters

: Wear self-contained breathing apparatus and protective suit.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions

: Wear personal protective equipment. Unprotected persons must be kept away.
Immediately evacuate personnel to safe areas.
Keep people away from and upwind of spill/leak.
Ensure adequate ventilation.
Remove all sources of ignition.
Do not swallow.
Avoid breathing vapours, mist or gas.
Avoid contact with skin, eyes and clothing.

Environmental precautions

: Prevent further leakage or spillage if safe to do so.
Prevent product from entering drains.
Discharge into the environment must be avoided.
Do not flush into surface water or sanitary sewer system.
Do not allow run-off from fire fighting to enter drains or water courses.

Methods for cleaning up

: Ventilate the area.
No sparking tools should be used.
Use explosion-proof equipment.
Contain and collect spillage with non-combustible absorbent materials, e.g. sand, earth, vermiculite, diatomaceous earth and place in container for disposal according to local

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regulations (see section 13).

SECTION 7. HANDLING AND STORAGE**Handling**

Handling : Wear personal protective equipment.
Use only in well-ventilated areas.
Keep container tightly closed.
Do not smoke.
Do not swallow.
Avoid breathing vapours, mist or gas.
Avoid contact with skin, eyes and clothing.

Advice on protection against fire and explosion : Keep away from fire, sparks and heated surfaces.
Take precautionary measures against static discharges.
Ensure all equipment is electrically grounded before beginning transfer operations.
Use explosion-proof equipment.
Keep product and empty container away from heat and sources of ignition.
No sparking tools should be used.
No smoking.

Storage

Requirements for storage areas and containers : Store in area designed for storage of flammable liquids.
Protect from physical damage.
Keep containers tightly closed in a dry, cool and well-ventilated place.
Containers which are opened must be carefully resealed and kept upright to prevent leakage.
Keep away from heat and sources of ignition.
Keep away from direct sunlight.
Store away from incompatible substances.
Container hazardous when empty.
Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

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- Protective measures : Ensure that eyewash stations and safety showers are close to the workstation location.
- Engineering measures : Use with local exhaust ventilation.
Prevent vapour buildup by providing adequate ventilation during and after use.
- Eye protection : Do not wear contact lenses.
Wear as appropriate:
Safety glasses with side-shields
If splashes are likely to occur, wear:
Goggles or face shield, giving complete protection to eyes
- Hand protection : Solvent-resistant gloves
Gloves must be inspected prior to use.
Replace when worn.
- Skin and body protection : Wear as appropriate:
Solvent-resistant apron
Flame retardant antistatic protective clothing
If splashes are likely to occur, wear:
Protective suit
- Respiratory protection : In case of insufficient ventilation wear suitable respiratory equipment.
For rescue and maintenance work in storage tanks use self-contained breathing apparatus.
Use NIOSH approved respiratory protection.
- Hygiene measures : When using, do not eat, drink or smoke.
Wash hands and face before breaks and immediately after handling the product.
Keep working clothes separately.
Remove and wash contaminated clothing before re-use.
Do not swallow.
Avoid breathing vapours, mist or gas.
Avoid contact with skin, eyes and clothing.

Exposure Guidelines

Contains no substances with occupational exposure limit values.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

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Physical state : liquid

Color : clear colourless

Odor : unpleasant

pH : Note: not applicable

Melting point/freezing point : -123 °C

Boiling point/boiling range : 78 °C

Flash point : 16 °F (-9 °C)

Lower explosion limit : 1 %(V)

Upper explosion limit : 10.1 %(V)

Vapor pressure : 106.79 hPa
at 20 °C(68 °F)

Vapor density : 3.2 Note: (Air = 1.0)

Density : 0.8862 g/cm³ at 20 °C

Water solubility : 0.66 g/l at 12 °C

Ignition temperature : 240 °C

Molecular weight : 92.58 g/mol

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SECTION 10. STABILITY AND REACTIVITY

Chemical stability	: Stable under normal conditions.
Possibility of hazardous reactions	: Hazardous polymerisation does not occur.
Conditions to avoid	: Heat, flames and sparks. Keep away from direct sunlight.
Incompatible materials to avoid	: Acids Bases Oxidizing agents Reducing agents Aluminium Oxygen Alkaline earth metals Alkali metals May attack many plastics, rubbers and coatings.
Hazardous decomposition products	: In case of fire hazardous decomposition products may be produced such as: Carbon monoxide Carbon dioxide (CO ₂) Phosgene Gaseous hydrogen chloride (HCl).

SECTION 11. TOXICOLOGICAL INFORMATION

Acute oral toxicity	: LD ₅₀ : 2,670 mg/kg Species: rat
Acute inhalation toxicity	: LC ₅₀ : > 7.74 mg/l , Mist Exposure time: 4 h Species: rat Note: No deaths
Acute dermal toxicity	: LD ₀ : 20,000 mg/kg

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Species: rabbit

Skin irritation

: Species: rabbit
Result: Mild skin irritation
Exposure time: 24 h

Eye irritation

: Species: rabbit eye
Result: Mild eye irritation
Exposure time: 24 h

Sensitisation

: Buehler Test
Species: guinea pig
Result: Did not cause sensitisation on laboratory animals.
Method: OECD Test Guideline 406

Repeated dose toxicity

: Species: rat
Application Route: Oral
Exposure time: 13 Weeks
NOEL: 120 mg/kg

Genotoxicity in vitro

: Test Method: Mutagenicity (Salmonella typhimurium - reverse mutation assay)
Metabolic activation: with and without metabolic activation
Result: negative

: Test Method: Mutagenicity (Escherichia coli - reverse mutation assay)
Metabolic activation: with and without metabolic activation
Result: negative

Carcinogenicity

: Species: rat
Application Route: Oral
Method: Animal testing did not show any carcinogenic effects.

Reproductive toxicity

: Species: rat
Application Route: Oral
NOAEL,parent: 2.4 mg/kg
NOAEL,F1: 60 mg/kg
Method: Animal experiments have shown effects on

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reproduction at doses toxic to the parents.

SECTION 12. ECOLOGICAL INFORMATION**Ecotoxicity effects**

Toxicity to fish : semi-static test
LC50: 120 mg/l
Exposure time: 96 h
Species: *Oryzias latipes* (Orange-red killifish)
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : static test
EC50: 380 mg/l
Exposure time: 24 h
Species: *Daphnia magna* (Water flea)
Method: OECD Test Guideline 202

Toxicity to algae : Biomass
EC50: > 1,000 mg/l
Exposure time: 72 h
Species: *Pseudokirchneriella subcapitata* (green algae)
Method: OECD Test Guideline 201

Toxicity to bacteria : EC10: 332.3 mg/l
Exposure time: 18 h
Species: *Pseudomonas putida*
Method: DIN 38412

Elimination information (persistence and degradability)

Bioaccumulation : Species: *Cyprinus carpio* (Carp)
Exposure time: 6 Weeks
Temperature: 25 °C
Bioconcentration factor (BCF): 90 - 450

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Biodegradability : Biochemical Oxygen Demand (BOD)
 Result: Not readily biodegradable.
 Value: 0 %
 Method: OECD 301 C

Further information on ecology**SECTION 13. DISPOSAL CONSIDERATIONS**

Disposal methods : Observe all Federal, State, and Local Environmental regulations.

SECTION 14. TRANSPORT INFORMATION

DOT UN/ID No. : UN 1127
 Proper shipping name : CHLOROBUTANES
 Class : 3
 Packing group : II
 Hazard Labels : 3

IATA UN/ID No. : UN 1127
 Description of the goods : CHLOROBUTANES
 Class : 3
 Packaging group : II
 Hazard Labels : 3
 Packing instruction (cargo aircraft) : 364
 Packing instruction (passenger aircraft) : 353
 Packing instruction (passenger aircraft) : Y341

IMDG UN/ID No. : UN 1127
 Description of the goods : CHLOROBUTANES
 Class : 3
 Packaging group : II
 Hazard Labels : 3
 EmS Number : F-E, S-D
 Marine pollutant : no

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SECTION 15. REGULATORY INFORMATION**Inventories**

- US. Toxic Substances Control Act : On TSCA Inventory
- Australia. Industrial Chemical (Notification and Assessment) Act : On the inventory, or in compliance with the inventory
- Canada. Canadian Environmental Protection Act (CEPA). Domestic Substances List (DSL) : All components of this product are on the Canadian DSL.
- Japan. Kashin-Hou Law List : On the inventory, or in compliance with the inventory
- Korea. Toxic Chemical Control Law (TCCL) List : On the inventory, or in compliance with the inventory
- Philippines. The Toxic Substances and Hazardous and Nuclear Waste Control Act : On the inventory, or in compliance with the inventory
- China. Inventory of Existing Chemical Substances : On the inventory, or in compliance with the inventory
- New Zealand. Inventory of Chemicals (NZIoC), as published by ERMA New Zealand : On the inventory, or in compliance with the inventory

National regulatory information

- SARA 302 Components** : SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.
- SARA 313 Components** : SARA 313: This material does not contain any chemical

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components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards : Fire Hazard
Acute Health Hazard

California Prop. 65 : This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

Massachusetts RTK : n-Butyl Chloride 109-69-3

New Jersey RTK : n-Butyl Chloride 109-69-3

Pennsylvania RTK : n-Butyl Chloride 109-69-3

WHMIS Classification : B2: Flammable liquid
D2B: Toxic Material Causing Other Toxic Effects
This product has been classified according to the hazard criteria of the CPR and the MSDS contains all of the information required by the CPR.

SECTION 16. OTHER INFORMATION

	HMIS III	NFPA
Health hazard	: 1	1
Flammability	: 3	3
Physical Hazard	: 0	
Instability	:	0

Hazard rating and rating systems (e.g. HMIS® III, NFPA): This information is intended solely for the use of individuals trained in the particular system.

Further information

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The information provided in this Safety Data Sheet 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 guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered 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 materials or in any process, unless specified in the text. Final determination of suitability of any material is the sole responsibility of the user. This information should not constitute a guarantee for any specific product properties.

Changes since the last version are highlighted in the margin. This version replaces all previous versions.

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