

SAFETY DATA SHEET

1. Identification of the substance or mixture and of the supplier

Product name : PI-6643-004
Reference number : CPS-W-0043G22E
Recommended use of the chemical and restrictions on use : Electronic materials; Do not use it other purposes.
Company name : JNC CORPORATION IT & Materials Division
Address : Shin-Otemachi Bldg., 2-1, Otemachi 2-Chome, Chiyoda-Ku, Tokyo, Japan
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Emergency contact : JNC PETROCHEMICAL CORPORATION Ichihara Research Laboratories
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2. Hazards identification

GHS classification

Flammable liquids : Category 4
Acute toxicity (Oral) : Category 4
Skin corrosion/irritation : Category 3
Serious eye damage/eye irritation : Category 2
Specific target organ toxicity (Single exposure) : Category 2(Central nervous system)
Category 3(Narcotic effects)

*) The hazards without the above mention are "Not applicable", "Not classified" or "Classification not possible".

GHS label element

Pictograms :



Signal word : Warning

Hazard statement

H227 Combustible liquid
H302 Harmful if swallowed
H316 Causes mild skin irritation
H319 Causes serious eye irritation
H371 May cause damage to Central nervous system
H336 May cause drowsiness or dizziness

Precautionary statement

Prevention

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P260 Do not breathe dust/fume/gas/mist/vapours/spray.
P264 Wash hands thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear protective gloves/protective clothing/eye protection/face protection.

Response

P370+P378 In case of fire: Use appropriate media to extinguish.
P301+P312 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.

P330 Rinse mouth.

P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P312 Call a POISON CENTER/doctor if you feel unwell.

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

P308+P311 IF exposed or concerned: Call a POISON CENTER/doctor.

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

P332+P313 If skin irritation occurs: Get medical advice/attention.

Storage

P405 Store locked up.

P403+P233 Store in a well-ventilated place. Keep container tightly closed.

Disposal

P501 Dispose of contents/container in accordance with local/ regional/ national/ international regulations.

Other hazards which do not result in classification : No data available

3. Composition/information on ingredients

Single chemical substance or mixture : Mixture

Chemical name or common name : Polymer solution

Ingredients and content

Name of ingredients	CAS No.	content [wt%]	Chemical or structural formula
Polymer	Trade secret	20-30	—
γ -Butyrolactone (GBL)	96-48-0	70-80	C ₄ H ₆ O ₂

The chemical name and CAS number of ingredients are confidential business information.

4. First-aid measures

IF INHALED : Remove victim to fresh air and keep at rest in a position comfortable for breathing.

IF ON SKIN : Take off immediately all contaminated clothing. Wash skin with plenty of water and soap.

IF IN EYES : Rinse cautiously with clean water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

IF INGESTED : Rinse mouth with water.

*) For above cases, take emergency measures and then, get medical advice/attention.

Most important symptoms/effects

: [Inhalation] Headache. Dizziness. Unconsciousness.
[Skin] Redness. Pain. Burning sensation.
[eye] Redness. Pain.

5. Fire-fighting measures

Suitable extinguishing media : Water spray, alcohol-resistant foam, dry powder, carbon dioxide, dry sand.

Unsuitable extinguishing media : No data available.

Specific hazards arising from the mixture : May ignite by heat, sparks and flames. Irritant, toxic or corrosive gas / dust / fume / mist / vapours may be generated in a fire. These gases are flammable and may be explosive.

- Specific fire-fighting procedures : Work from the windward side during fire-fighting. Move movable containers to safe place. When containers cannot be moved, keep surroundings cool with spray water.
- Special protective equipment for precautions for fire-fighting : Wear air respirators, protective clothing (heat-resistant) during fire fighting.

6. Accidental release measures

- Personal precautions, protective equipment and emergency procedures : Isolate spill or leak area immediately for appropriate distance in all directions. Keep unauthorized personnel away. Workers shall wear personal protective equipment such as eye protection, protective gloves, long-sleeve working clothes, face protection and a mask, and avoid contact with eyes and skin, inhalation and intake by mistake.
- Environmental precautions : Avoid release to the environment. Do not allow flow into rivers.
- Method and materials for containment and cleaning up : Absorb with dry soil, sand or noncombustible material, and collect into sealable containers. Always wear personal protective equipment upon working, and work in the windward.
- Secondary disaster prevention measures : Remove all sources of ignition around the area to prevent secondary disaster such as fire, etc. (NO smoking, NO sparks, NO flames in the vicinity.) Make provision of suitable fire extinguishers against case of ignition.

7. Handling and storage

- Precautions for safe handling : Keep away from heat, sparks, open flames, or hot surfaces, and avoid use of other equipment which may be ignition sources. Wear suitable protective equipment to prevent inhalation or contact with eyes, skin and clothing.
- Handle within local exhaust ventilation when working indoors. Take precautionary measures against static discharge. Apply engineering controls described in "Section 8. Exposure Controls/Personal Protection." See "Section 10. Stability and reactivity" for incompatible materials.
- Do not eat, drink or smoke during working. Wash hands thoroughly after handling the product.
- Conditions for safe storage : Store product containers locked up in an explosion-proof refrigerator at -25° C to -15° C under a closed state. Use sealable the container made of polyethylene.

8. Exposure controls/personal protection

- Control parameters : Not specified as the product.
- ACGIH (2012) : No data available
- Appropriate engineering controls : Use explosion-proof electrical/ventilating equipment/lighting. Needed to take precautionary measures against static discharge, such as electrostatic shoes. Perform ventilation for exhaust so as to avoid inhalation of vapors or mist in air. Provide eye wash and body flushing facilities in working place for storing or handing this product.
- Seal the process, use local exhaust ventilation and other engineering controls for preventing inhalation of vapors or the like generated from the product.
- Individual protection measures, such as personal protective equipment
- Respiratory protection : The mask is recommended to be done so as not to inhale it.
- Hand protection : Heavy-duty protective gloves resistant to solvents in the ingredients (gloves made from polyethylene, polypropylene, silicone rubber or the like).

- Eye protection : Suitable eye protection (protective spectacles having a significant mist sealing effect, such as a goggle type).
- Skin and body protection : Long sleeve working clothes and antistatic work shoes.

9. Physical and chemical properties

- Physical state : Liquid
- Color : Clear colored
- Odor : Characteristic odor
- Odor threshold : No data available
- pH : This item cannot be substantially measured, because it's solubility in water is low.
- Melting point [°C] : No data available
- Boiling point and boiling range [°C] : 204 (Merck Ver.12:2)
- Flash point [°C] : 85(Closed Cup)
- Evaporation rate : No data available
- Flammability (solid, gas) : No data available
- Upper/lower flammability or explosive limits [vol %] : 1.4–16
- Vapor pressure [Pa]
- GBL : 150 (20°C) (ICSC, 2018)
- Vapor density : No data available
- Relative density : Ca. 1
- Solubility : Easily soluble in organic solvents such as N-methyl-2-pyrrolidone and propylene glycol monomethyl ether acetate. Insoluble in water.
- Partition coefficient (n-octanol/water) [Log Pow] : No data available
- Auto-ignition temperature [°C] : 455 (ICSC(2018))
- Decomposition temperature [°C] : No data available
- Viscosity : 15–25mPa·s (25°C)

10. Stability and reactivity

- Reactivity : No data available
- Chemical stability : Stable when stored at –25 to –15°C.
- Possibility of hazardous reactions : Decomposes on heating and on burning. Reacts with strong oxidants. This generates fire and explosion hazard.
- Conditions to avoid : Heat, open flames, hot surfaces, sparkover, static discharge, other ignition sources.
- Incompatible materials : Strong oxidants, strong bases, strong acids
- Hazardous decomposition products : No data available

11. Toxicological information

- Acute toxicity (Oral)
- GBL : LD50=1,200mg/kg (Rat) (IARC 11(1976))
- Acute toxicity (Dermal)
- GBL : LD50=5,600mg/kg (Guinea pig) (IARC 11(1976))
- Acute toxicity (Inhalation : Gases) : Not applicable
- Acute toxicity (Inhalation : Vapours) : No data available
- Acute toxicity (Inhalation : Dusts and Mists)
- GBL : LC50>5.1mg/L (Rat) (IUCLID(2000))
- Skin corrosion/irritation

GBL : Mildly irritating (rabbit) (HSDB (2008))
Serious eye damage/eye irritation
GBL : irritating (MMAS 43.9(max.110)) (OECD TG405, GLP, Rabbit)
(ECETOC TR 48(1998))
Respiratory sensitization : No data available
Skin sensitization : No data available
Germ cell mutagenicity
GBL : in vivo Micronucleus test negative (mouse) (IARC 71(1999)) Ames
test: negative (IARC 71(1999)), Chromosome Aberration Test:
positive (NTP DB(Access on Jul. 2010))
Carcinogenicity : This product is not listed by IARC, EPA, EU, NTP, ACGIH or JSOH as a carcinogen.
Reproductive toxicity : No data available
Specific target organ toxicity (Single exposure)
GBL : Category 2 (Central nervous system), Category 3 (Narcotic effects)
(Kemi-Riskline(2004))
Specific target organ toxicity (Repeated exposure) : No data available
Aspiration hazard : No data available

12. Ecological information

Ecotoxicity : No data available
Persistence and degradability
GBL : Biodegradation(BOD)=77% (J-CHECK)
Bioaccumulative potential : No data available
Mobility in soil : No data available
Other adverse effects : No data available

13. Disposal considerations

Observe all federal, state, and local regulations when disposing of this substance. Dispose of empty containers after completely removing contents. Do not dispose of waste into sewer.

14. Transport information

UN Number : None
UN Proper Shipping Name : None
Transport hazard class : None
Packing group : None
Marine pollutant (Yes/No) : No
Specific transport measures and
precautionary conditions : Confirm whether there is leakage in the container before
transporting. Load luggage so as not to cause the fall and the
tumble and the damage. Prevent the collapse of cargo piles.
General information : Depending on the applicable transport regulation (such as: IMO-
IMDG code, ICAO-TI / IATA-DGR).

15. Regulatory information

The Montreal Protocol on Substances that Deplete the Ozone Layer : Not applicable
The Stockholm Convention on Persistent Organic Pollutants : Not applicable
The Rotterdam Convention on the Prior Informed Consent Procedure for Certain
Hazardous Chemicals and Pesticides in International Trade : Not applicable

16. Other information

Issue Date : 2022/09/29
Revision Date : 2022/09/29
Version : PE22v006

Source of Data : References are described in each data.

Note on the information in the Safety Data Sheet(SDS)

- : The SDS is prepared based on the currently available latest materials and data, but is not always perfect.
- : The SDS may be revised based on new information.
- : The precautionary statements in the SDS are appropriate under conditions of normal handling, and when users specially handle the product, the users shall confirm the safety.
- : Each numerical value provided in the SDS is not a guaranteed value.