

SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1 Product identifier**

Product form : Mixture
Product name : #1091 Butyl carbitol
Product code : Solvent.
Product group : Commercial product

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

Use of the substance/preparation : Industrial manufacture of coatings and inks

1.3. Details of the supplier of the safety data sheet

TW Graphics Group
3323 S. Malt Avenue
Commerce, CA 90040

T 323-721-1400

www.twgraphics.com

1.4. Emergency telephone number

Emergency number : 800-424-9300
For Chemical Emergency, Spill, Leak, Fire, Exposure, or Accident, call
CHEMTREC – Day or Night

SECTION 2: Hazards identification**2.1. Classification of the substance or mixture****GHS Classification**

Eye irritation : Category 2A

GHS-US labeling

Hazard pictograms (GHS-US)



Signal word (GHS-US) : Warning
Hazard statements (GHS-US) : H319 - Causes serious eye irritation.

Precautionary statements : **Prevention:**
P264 Wash skin thoroughly after handling.



P280 Wear eye protection/ face protection.

: Response:

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.

Potential Health Effects

**Carcinogenicity:
IARC**

No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH

No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

OSHA

No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

NTP

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.

Emergency Overview

Appearance	liquid
Colour	colourless
	clear
Odour	very faint
	Ethereal odor
Hazard Summary	No information available.

SECTION 3: Composition/information on ingredients

Hazardous components

CAS-No. Chemical	Chemical Name	Concentration (%)
112-34-5	Diethylene glycol monobutyl ether	90 - 100

SECTION 4: First aid measures

General advice	: Move out of dangerous area. Show this safety data sheet to the doctor in attendance. Do not leave the victim unattended.
If inhaled	: If unconscious place in recovery position and seek medical advice. If symptoms persist, call a physician.
In case of eye contact	: Immediately flush eye(s) with plenty of water. Keep eye wide open while rinsing. If eye irritation persists, consult a specialist.
If swallowed	: Keep respiratory tract clear. Do not give milk or alcoholic beverages. Never give anything by mouth to an unconscious person. If symptoms persist, call a physician.

SECTION 5: Firefighting measures

Unsuitable extinguishing Media	: High volume water jet
Specific hazards during firefighting	: Do not allow run-off from fire fighting to enter drains or water courses.
Hazardous combustion products	: No hazardous combustion products are known
Specific extinguishing Methods	: Standard procedure for chemical fires.
Further information	: Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
Special protective equipment for firefighters	: Wear self-contained breathing apparatus for firefighting if necessary.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures	: Use personal protective equipment.
Environmental precautions	: Prevent product from entering drains. Prevent further leakage or spillage if safe to do so. If the product contaminates rivers and lakes or drains inform respective authorities.

Methods and materials for containment and cleaning up : Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).
Keep in suitable, closed containers for disposal.

SECTION 7: Handling and storage

Advice on safe handling : Do not breathe vapours/dust.
Avoid contact with skin and eyes. For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area. Dispose of rinse water in accordance with local and national regulations.

Conditions for safe storage : Keep container tightly closed in a dry and well ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Electrical installations / working materials must comply with the technological safety standards.

SECTION 8: Exposure controls/personal protection

Components with workplace control parameters

Contains no substances with occupational exposure limit values.

Personal protective equipment

Respiratory protection : No personal respiratory protective equipment normally required.

Hand protection
Remarks :The suitability for a specific workplace should be discussed with the producers of the protective gloves.

Eye protection : Eye wash bottle with pure water
Tightly fitting safety goggles
Wear face-shield and protective suit for abnormal processing problems.

Skin and body protection : impervious clothing
Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Hygiene measures : When using do not eat or drink.
When using do not smoke. Wash hands before breaks and at the end of workday.

SECTION 9: Physical and chemical properties

Appearance : Liquid
Colour : colourless, clear.

Odour	: very faint, Ethereal odor
Odour threshold	: No data available
Ph	: No data available
Freezing Point (Melting point/freezing point)	: -68 °C (-90 °F)
Boiling Point (Boiling point/boiling range)	: 225 - 230 °C (437 - 446 °F)
Flash point	: 114 °C (237 °F)
Evaporation rate	: 0.01
Flammability (solid, gas)	: No data available
Burning rate	: No data available
Upper explosion limit	: 24.6 %(V)
Lower explosion limit	: 0.7 %(V)
Vapour pressure	: 0.021 mmHg @ 25 °C (77 °F)
Relative vapour density	: 5.6
Relative density	: 0.95 - 0.96 @ 20 °C (68 °F)
Density	: 0.955 g/cm ³ @ 20 °C (68 °F)
Bulk density	: No data available
Solubility(ies) Water solubility	: 0.955 g/l completely miscible @ 20 °C (68 °F)
Solubility in other solvents	: No data available
Partition coefficient noctanol/water	: log Pow: 1
Auto-ignition temperature	: 210 °C
Thermal decomposition	: No data available

SECTION 10: Stability and reactivity

Reactivity	: No dangerous reaction known under conditions of normal use.
Chemical stability	: Stable under normal conditions.
Possibility of hazardous Reactions	: No hazards to be specially mentioned.



Conditions to avoid : No data available

Incompatible materials : Avoid contact with:
Light metals
Strong oxidizing agents

SECTION 11: Toxicological information

Acute toxicity

Product:

Acute oral toxicity : Acute toxicity estimate : 2,410 mg/kg
Method: Calculation method

Acute dermal toxicity : Acute toxicity estimate : 2,764 mg/kg
Method: Calculation method

Components:

112-34-5:

Acute oral toxicity :LD50 (rat, male): 2,410 mg/kg

Acute inhalation toxicity :Remarks: No data available

Acute dermal toxicity : LD50 (rabbit, male): 2,764 mg/kg

Skin corrosion/irritation

Product:

Remarks: Not irritating to skin

Components:

112-34-5:

Species: rabbit

Exposure time: 1 h

Classification: No skin irritation

Method: OECD Test Guideline 404

Result: Slightly irritating to skin

Serious eye damage/eye irritation

Product:

Remarks: Contact with eyes may cause irritation.

Components:

112-34-5:

Species: rabbit

Result: Irritating to eyes.

Method: In vivo

Respiratory or skin sensitisation

Components:**112-34-5:**

Test Type: Maximisation Test (GPMT)

Species: guinea pig

Method: OECD Test Guideline 406

Result: Did not cause sensitisation on laboratory animals.

Germ cell mutagenicity**Components:****112-34-5:**

Genotoxicity in vitro

: Test Type: Chromosome aberration test in vitro

Test species: Chinese hamster ovary (CHO)

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 473

Result: negative

: Test Type: Ames test

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 471

Result: negative

: Test Type: Mammalian cell gene mutation assay

Test species: Chinese hamster ovary (CHO)

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 476

Result: negative

GLP: yes

Genotoxicity in vivo

:Test Type: In vivo micronucleus test

Test species: mouse (male and female)

Cell type: Bone marrow

Application Route: Oral

Exposure time: Single

Dose: 0, 330, 1100, 3300 mg/kg bw

Method: OECD Test Guideline 475

Result: negative

Test Type: Sex-linked recessive lethal test

Test species: Drosophila melanogaster (male and female)

Application Route: Oral

Exposure time: Single

Dose: 0, 11000 ppm

Method: OECD Test Guideline 477

Result: negative

Germ cell mutagenicity-
Assessment

:Did not show mutagenic effects in animal experiments.

Carcinogenicity**Components:****112-34-5:**

Remarks: This information is not available.

Carcinogenicity –Assessment :Carcinogenicity classification not possible from current data.

Reproductive toxicity

Components: 112-34-5:

Effects on fertility

:Test Type: One generation study
Species: rat, male and female
Application Route: Dermal
Dose: 0, 2000 mg/kg
Duration of Single Treatment: 6 h
Frequency of Treatment: 5 days/week
General Toxicity - Parent: NOAEL: 2,000 mg/kg body weight
General Toxicity F1: NOAEL: 2,000 mg/kg body weight
Fertility: NOAEL: 2,000 mg/kg body weight
Method: OECD Test Guideline 415
Result: No reproductive effects.

Test Type: One generation study
Species: rat, male and female
Application Route: Oral
Dose: 0, 250, 500, 1000 mg/kg bw/da
General Toxicity - Parent: NOAEL: 1,000 mg/kg body weight
General Toxicity F1: NOAEL: 500 mg/kg body weight
Fertility: NOAEL: 1,000 mg/kg body weight
Symptoms: Reduced offspring weight gain.
Method: OECD Test Guideline 415
Result: No reproductive effects.

Effects on foetal Development

:Species: rabbit
Application Route: Dermal
Dose: 0, 100, 300, 1000 mg/kg bw
Duration of Single Treatment: 12 d
Frequency of Treatment: 4 hr/day
General Toxicity Maternal: NOAEL: 1,000 mg/kg body weight
Teratogenicity: NOAEL: 1,000 mg/kg body weight
Method: OECD Test Guideline 414
Result: No teratogenic effects.

Species: rat
Application Route: Oral
Dose: 0, 25, 115, 633 mg/kg bw/day
Duration of Single Treatment: 20 d
General Toxicity Maternal: NOAEL: 633 mg/kg body weight
Teratogenicity: NOAEL: 633 mg/kg body weight
Method: OECD Test Guideline 414
Result: No teratogenic effects.



Reproductive toxicity -
Assessment

:Animal testing did not show any effects on fertility.
Did not show teratogenic effects in animal experiments.

STOT - single exposure

Product: No data available

Components:

112-34-5:No data available

STOT - repeated exposure

Product: No data available

Components:

112-34-5:No data available

Repeated dose toxicity

Components:

112-34-5:

Species: rat, male and female
NOAEL: 250 mg/kg
Application Route: Oral
Exposure time: 90 d
Number of exposures: daily
Dose: 0, 50, 250, 1000 mg/kg
Method: OECD Test Guideline 408
GLP: yes
Symptoms: Blood disorders

Species: rat, male and female
NOAEL: 14
Application Route: Inhalation
Exposure time: 90 d
Number of exposures: 6 h/d
Dose: 0, 2, 6, 14 ppm
Method: OECD Test Guideline 413
GLP: yes

Species: rat, male and female
NOAEL: > 2,000 mg/kg
Application Route: Dermal
Exposure time: 13 wks
Number of exposures: 6 h/d, 5 d/wk
Dose: 0, 200, 600, 2000 mg/kg bw/day
Symptoms: Local irritation

Repeated dose toxicity -
Assessment

:Causes serious eye irritation.

Aspiration toxicity

Product:

No aspiration toxicity classification

Components:**112-34-5:**

No aspiration toxicity classification

Further information**Product:**

Remarks: No data available

SECTION 12: Ecological information**Ecotoxicity****Components:****112-34-5:**

Toxicity to fish	: LC50 (Lepomis macrochirus (Bluegill sunfish)): 1,300 mg/l Exposure time: 96 h Test Type: static test
Toxicity to daphnia and other aquatic invertebrates	: EC50 (Daphnia magna (Water flea)): > 100 mg/l Exposure time: 48 h Test Type: static test GLP: yes
Toxicity to algae	: EC50 (Scenedesmus capricornutum (fresh water algae)): 100 mg/l Exposure time: 96 h Test Type: static test Method: OECD Test Guideline 201 GLP: yes
Toxicity to bacteria	: Toxicity threshold (Pseudomonas putida): 255 mg/l End point: Growth rate Exposure time: 16 h Test Type: Static GLP:

Persistence and degradability**Components:****112-34-5:**

Biodegradability	: Result: Readily biodegradable. Biodegradation: 100 % Exposure time: 28 d Method: OECD Test Guideline 302B
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Theoretical Oxygen Demand (ThOD)	: 0.00217 mg/g
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Bioaccumulative potential**Components:****112-34-5:**

Partition coefficient:	: log Pow: 0.56
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noctanol/water

Mobility in soil**Components:****112-34-5:**

Stability in soil : Remarks: Not expected to adsorb on soil.

Other adverse effects

No data available

Product:

Regulation 40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances

Remarks This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

Additional ecological Information : An environmental hazard cannot be excluded in the event of unprofessional handling or disposal., Harmful to aquatic life.

SECTION 13: Disposal considerations**Disposal methods**

Waste from residues : Dispose of in accordance with all applicable local, state and federal regulations.
For assistance with your waste management needs - including disposal, recycling and waste stream reduction, contact TW Graphics Group at 800-7341704.

Contaminated packaging : Empty remaining contents.
Dispose of as unused product.
Do not re-use empty containers.

SECTION 14: Transport information

IATA (International Air Transport Association): Not regulated as a dangerous good

IMDG-Code: Not regulated as a dangerous good

DOT (Department of Transportation): Not regulated as a dangerous good

SECTION 15: Regulatory information

OSHA Hazards : Moderate eye irritant

EPCRA - Emergency Planning and Community Right-to-Know Act



CERCLA Reportable Quantity

This material does not contain any components with a CERCLA RQ.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards : Acute Health Hazard

SARA 302 : SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 : The following components are subject to reporting levels established by SARA Title III, Section 313:

112-34-5	Diethylene glycol monobutyl ether	100 %
111-76-2	2-Butoxy ethanol	0.5 %

Clean Air Act

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 12 (40 CFR 61).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

The following chemical(s) are listed under the U.S. Clean Air Act Section 111 SOCM I Intermediate or Final VOC's (40 CFR 60.489):

112-34-5	Diethylene glycol monobutyl ether	100 %
111-76-2	2-Butoxy ethanol	0.5 %

Clean Water Act

This product does not contain any Hazardous Substances listed under the U.S. CleanWater Act, Section 311, Table 116.4A.

This product does not contain any Hazardous Chemicals listed under the U.S. Clean-Water Act, Section 311, Table 117.3.

This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307

US State Regulations

Massachusetts Right To Know

No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right To Know

112-34-5	Diethylene glycol monobutyl ether	90 - 100 %
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New Jersey Right To Know

112-34-5	Diethylene glycol monobutyl ether	90 - 100 %
111-76-2	2-Butoxy ethanol	0.1 - 1 %

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.

The components of this product are reported in the following inventories:

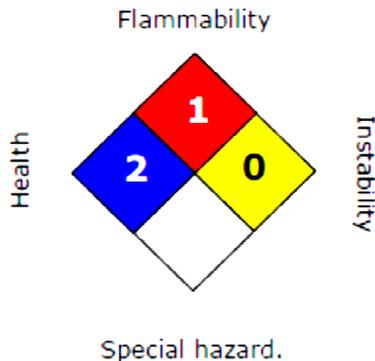
1907/2006 (EU)	:	n (Negative listing) (Not in compliance with the inventory)
Switzerland. New notified substances and declared preparations	:	y (positive listing) (The formulation contains substances listed on the Swiss Inventory)
United States TSCA Inventory	:	y (positive listing) (On TSCA Inventory)
Canadian Domestic Substances List (DSL)	:	y (positive listing) (All components of this product are on the Canadian DSL.)
Australia Inventory of Chemical Substances (AICS)	:	y (positive listing) (On the inventory, or in compliance with the inventory)
New Zealand. Inventory of Chemical Substances	:	y (positive listing) (On the inventory, or in compliance with the inventory)
Japan. ENCS - Existing and New Chemical Substances Inventory	:	y (positive listing) (On the inventory, or in compliance with the inventory)
Japan. ISHL - Inventory of Chemical Substances (METI)	:	y (positive listing) (On the inventory, or in compliance with the inventory)
Korea. Korean Existing Chemicals Inventory (KECI)	:	y (positive listing) (On the inventory, or in compliance with the inventory)
Philippines Inventory of Chemicals and Chemical Substances (PICCS)	:	y (positive listing) (On the inventory, or in compliance with the inventory)
China. Inventory of Existing Chemical Substances in China (IECSC)	:	y (positive listing) (On the inventory, or in compliance with the inventory)

SECTION 16: Other information



Further information

NFPA:



HMIS III:

HEALTH	2
FLAMMABILITY	1
PHYSICAL HAZARD	0

0 = not significant, 1 =Slight,
2 = Moderate, 3 = High
4 =Extreme, * = Chronic

The information accumulated is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made become available subsequently to the date hereof, we do not assume any responsibility for the results of its use. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable to their circumstances. This MSDS has been prepared by TW Graphics Group EHS Product Safety Department (1-800-424-9300).

Legacy MSDS: R0003561

Material number:

623615, 103505, 16062078, 16056130, 16056129, 16046627, 16013465,
16009308, 704330, 702229, 614772, 583522, 554136, 554321, 554135, 554094,
554269, 547110, 508363, 119106, 162305, 69434, 86831, 53253, 86010, 86830,
102392, 54531, 85815, 70895, 69295, 86479, 69294, 86482, 85993, 53721,
53235, 503170, 20340, 20339, 508323

ACGIH	American Conference of Government Industrial Hygienists	LD50	Lethal Dose 50%
AICS	Australia, Inventory of Chemical Substances	LOAEL	Lowest Observed Adverse Effect Level
DSL	Canada, Domestic Substances List	NFPA	National Fire Protection Agency
NDSL	Canada, Non-Domestic Substances List	NIOSH	National Institute for Occupational Safety & Health
CNS	Central Nervous System	NTP	National Toxicology Program
CAS	Chemical Abstract Service	NZIoC	New Zealand Inventory of Chemicals
EC50	Effective Concentration	NOAL	No Observable Adverse Effect

			Level
EC50	Effective Concentration 50%	NOEC	No Observed Effect Concentration
EGEST	EOSCA Generic Exposure Scenario Tool	OSHA	Occupational Safety & Health Administration
EOSCA	European Oilfield Specialty Chemicals Association	PEL	Permissible Exposure Limit
EINECS	European Inventory of Existing Chemical Substances	PICCS	Philippines Inventory of Commercial Chemical Substances
MAK	Germany Maximum Concentration Values	PRINT	Presumed Not Toxic
GHS	Globally Harmonized System	RCRA	Resource Conservation Recovery Act
>=	Greater Than or Equal T	STEL	Short-term Exposure Limit
IC50	Inhibition Concentration 50%	SARA	Superfund Amendments and Reauthorization Act.
IARC	International Agency for Research on Cancer	TLV	Threshold Limit Value
IECSC	Inventory of Existing Chemical Substances in China	TWA	Time Weighted Average
ENCS	Japan, Inventory of Existing and New Chemical Substances	TSCA	Toxic Substance Control Act
KECI	Korea, Existing Chemical Inventory	UVCB	Unknown or Variable Composition, Complex Reaction Products, and Biological Materials
<=	Less Than or Equal To	WHMIS	Workplace Hazardous Materials Information System
LC50			Lethal Concentration 50%

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.