



Safety Data Sheet

CHROMATOGRAPHY SOLVENT

Safety Data Sheet dated 9/8/2017, version 1

1. IDENTIFICATION

Product identifier

Mixture identification:

Trade name: CHROMATOGRAPHY SOLVENT

Other means of identification:

Product codes: 10-043-0118, 10-043-0237, 10-043-0473, 10-043-0946

Recommended use of the chemical and restrictions on use

Recommended use:

FOR PROFESSIONAL USE

Restrictions on use:

Name, address, and telephone number of the chemical manufacturer, importer, or other responsible party

Company:

Enartis USA Inc.

7795 Bell Road

Windsor

CA 95492

Competent person responsible for the safety data sheet:

compliance@enartis.com

Emergency phone number

Phone: +1 (707) 838 6312

Fax: +1 (707) 838 1765

2. HAZARD(S) IDENTIFICATION

Classification of the chemical

- ⚠ Warning, Flam. Liq. 3, Flammable liquid and vapour.
- ⚠ Warning, Acute Tox. 4, Harmful if swallowed.
- ⚠ Danger, Skin Corr. 1A, Causes severe skin burns and eye damage.
- ⚠ Danger, Eye Dam. 1, Causes serious eye damage.
- ⚠ Warning, STOT SE 3, May cause respiratory irritation.
- ⚠ Warning, STOT SE 3, May cause drowsiness or dizziness.
- ⚠ Warning, STOT RE 2, May cause damage to organs through prolonged or repeated exposure.

Label elements

Hazard pictograms:



Danger

Hazard statements:

H226 Flammable liquid and vapour.

H302 Harmful if swallowed.

H314 Causes severe skin burns and eye damage.

H318 Causes serious eye damage.

H335 May cause respiratory irritation.

H336 May cause drowsiness or dizziness.

H373 May cause damage to organs through prolonged or repeated exposure.



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Precautionary statements:

P210 Keep away from heat/sparks/open flames/hot surfaces. — No smoking.
P242 Use only non-sparking tools.
P243 Take precautionary measures against static discharge.
P260 Do not breathe vapours.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P301+P312 IF SWALLOWED: Call a doctor if you feel unwell.
P301+P330+P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310 Immediately call a doctor.
P403+P233 Store in a well-ventilated place. Keep container tightly closed.

Special Provisions:

None

Hazards not otherwise classified identified during the classification process:

None

Ingredient(s) with unknown acute toxicity:

None.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substances

N.A.

Mixtures

Hazardous components within the meaning of 29 CFR 1910.1200 and related classification:

>= 40% - < 50% butan-1-ol

Index number: 603-004-00-6, CAS: 71-36-3, EC: 200-751-6

- ⚠ B.6/3 Flam. Liq. 3 H226
- ⚠ A.8/3 STOT SE 3 H335
- ⚠ A.2/2 Skin Irrit. 2 H315
- ⚠ A.3/2A Eye Irrit. 2A H319
- ⚠ A.9/2 STOT RE 2 H373
- ⚠ A.1/4/Oral Acute Tox. 4 H302
- ⚠ A.8/3 STOT SE 3 H336

>= 5% - < 7% Formic Acid

Index number: 607-001-00-0, CAS: 64-18-6, EC: 200-579-1

- ⚠ A.1/4/Oral Acute Tox. 4 H302
- ⚠ A.2/1A Skin Corr. 1A H314
- ⚠ A.3/1 Eye Dam. 1 H318
- ⚠ A.8/3 STOT SE 3 H335
- ⚠ B.16/1 Met. Corr. 1 H290
- ⚠ B.6/3 Flam. Liq. 3 H226

4. FIRST-AID MEASURES

Description of necessary measures

In case of skin contact:

Immediately take off all contaminated clothing.
OBTAIN IMMEDIATE MEDICAL ATTENTION.
Remove contaminated clothing immediately and dispose off safely.
After contact with skin, wash immediately with soap and plenty of water.

In case of eyes contact:

After contact with the eyes, rinse with water with the eyelids open for a sufficient length of time,



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then consult an ophthalmologist immediately.

Protect uninjured eye.

In case of Ingestion:

Do not under any circumstances induce vomiting. OBTAIN A MEDICAL EXAMINATION IMMEDIATELY.

Give nothing to eat or drink.

In case of Inhalation:

In case of inhalation, consult a doctor immediately and show him packing or label.

Most important symptoms/effects, acute and delayed

None

Indication of immediate medical attention and special treatment needed

In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

Treatment:

None

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media:

CO2 or Dry chemical fire extinguisher.

Unsuitable extinguishing media:

None in particular.

Specific hazards arising from the chemical

Do not inhale explosion and combustion gases.

Hazardous combustion products:

None

Explosive properties:

N.A.

Oxidizing properties:

N.A.

Special protective equipment and precautions for fire-fighters

Use suitable breathing apparatus .

Collect contaminated fire extinguishing water separately. This must not be discharged into drains.

Move undamaged containers from immediate hazard area if it can be done safely.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment, and emergency procedures

Wear personal protection equipment.

Remove all sources of ignition.

Wear breathing apparatus if exposed to vapours/dusts/aerosols.

Provide adequate ventilation.

Remove persons to safety.

Use appropriate respiratory protection.

See protective measures under point 7 and 8.

Methods and materials for containment and cleaning up

Wash with plenty of water.

7. HANDLING AND STORAGE

Precautions for safe handling

Avoid contact with skin and eyes, inhalation of vapours and mists.

Do not use on extensive surface areas in premises where there are occupants.

Use localized ventilation system.

Don't use empty container before they have been cleaned.

Before making transfer operations, assure that there aren't any incompatible material residuals in the containers.

Contaminated clothing should be changed before entering eating areas.

Do not eat or drink while working.

See also section 8 for recommended protective equipment.



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Conditions for safe storage, including any incompatibilities

Always keep in a well ventilated place.

Keep away from unguarded flame, sparks, and heat sources. Avoid direct exposure to sunlight.

Avoid accumulating electrostatic charge.

Keep away from food, drink and feed.

Incompatible materials:

None in particular.

Instructions as regards storage premises:

Cool and adequately ventilated.

Safety electric system.

Storage temperature:

Store at ambient temperature.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

butan-1-ol - CAS: 71-36-3

OSHA - TWA: 300 mg/m³, 100 ppm - Notes: US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)

ACGIH - TWA(8h): 20 ppm - Notes: US. ACGIH Threshold Limit Values (2011)

NIOSH - TWA: 150 mg/m³, 50 ppm - Notes: US. NIOSH: Pocket Guide to Chemical Hazards (2010)

National - TWA: 150 mg/m³, 50 ppm - Notes: US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants (08 2010)

Formic Acid - CAS: 64-18-6

OSHA - TWA: 9 mg/m³, 5 ppm - Notes: US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)

EU - TWA(8h): 9 mg/m³, 5 ppm

ACGIH - TWA: 5 ppm - STEL: 10 ppm - Notes: US. ACGIH Threshold Limit Values (2011)

Appropriate engineering controls:

None

Individual protection measures

Eye protection:

Eye glasses with side protection.

Protection for skin:

Use clothing that provides comprehensive protection to the skin, e.g. cotton, rubber, PVC or viton.

Protection for hands:

Use protective gloves that provides comprehensive protection.

Respiratory protection:

Gas filtering device (DIN EN 141).

Thermal Hazards:

None

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance and colour:	Liquid
Odour:	Characteristic
Odour threshold:	N.A.
pH:	N.A.
Melting point / freezing point:	-89.8 °C
Initial boiling point and boiling range:	118 °C
Solid/gas flammability:	N.A.
Upper/lower flammability or explosive limits:	N.A.
Vapour density:	2.6
Flash point:	37°C °F
Evaporation rate:	N.A.
Vapour pressure:	N.A.

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Relative density:	0.8098 (4°C)
Solubility in water:	90 g/l
Solubility in oil:	N.A.
Partition coefficient (n-octanol/water):	0.88
Auto-ignition temperature:	650 °F
Decomposition temperature:	N.A.
Viscosity:	N.A.
Miscibility:	N.A.
Fat Solubility:	N.A.
Conductivity:	N.A.
Substance Groups relevant properties	N.A.

10. STABILITY AND REACTIVITY

Reactivity

It may generate dangerous reactions (See subsections below)

Chemical stability

It may generate dangerous reactions (See subsections below)

Possibility of hazardous reactions

None

Conditions to avoid

Avoid accumulating electrostatic charge.

Incompatible materials

Avoid contact with combustible materials. The product could catch fire.

Hazardous decomposition products

None.

11. TOXICOLOGICAL INFORMATION

Information on toxicological effects

Toxicological information of the product:

N.A.

Toxicological information of the main substances found in the product:

butan-1-ol - CAS: 71-36-3

a) acute toxicity:

Test: LD50 - Route: Oral - Species: Rat = 790 mg/kg

Test: LD50 - Route: Inhalation - Species: Rat = 8000 Ppm

Test: LD50 - Route: Skin - Species: Rabbit = 3400 mg/kg

b) skin corrosion/irritation:

Test: Skin Irritant - Route: Skin Positive

Test: Eye Corrosive Positive

Formic Acid - CAS: 64-18-6

a) acute toxicity:

Test: LD50 - Route: Oral - Species: Rat = 730 mg/kg - Source: OECD Test Guideline 401

Test: LC50 - Route: Inhalation - Species: Rat = 7.4 mg/l - Duration: 4h

Test: LC50 - Route: Inhalation - Species: Mouse = 6.2 mg/l - Notes: 15 min

b) skin corrosion/irritation:

Test: Skin Corrosive - Route: Skin Positive

Test: Eye Corrosive Positive

Substance(s) listed on the NTP report on Carcinogens:

None.

Substance(s) listed on the IARC Monographs:

None.

Substance(s) listed as OSHA Carcinogen(s):

None.

Substance(s) listed as NIOSH Carcinogen(s):

None.



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12. ECOLOGICAL INFORMATION

Ecotoxicity

Adopt good working practices, so that the product is not released into the environment.

butan-1-ol - CAS: 71-36-3

a) Aquatic acute toxicity:

Endpoint: LC50 - Species: Fish > 100 mg/l - Duration h: 96

Endpoint: LC50 - Species: Fish = 1.910 mg/l - Duration h: 96

Endpoint: LC50 - Species: Fish = 1.200 mg/l - Duration h: 48

Endpoint: LC50 - Species: Daphnia = 1.855 mg/l - Duration h: 24

Endpoint: LC50 - Species: Daphnia = 2.950 mg/l - Duration h: 24

Formic Acid - CAS: 64-18-6

a) Aquatic acute toxicity:

Endpoint: LC50 - Species: Fish = 175 mg/l - Duration h: 24

Endpoint: EC50 - Species: Daphnia > 138 mg/l - Duration h: 48

Endpoint: LC50 - Species: Daphnia = 410 mg/l - Duration h: 24

Endpoint: LC50 - Species: Daphnia > 80 mg/l - Duration h: 48

Persistence and degradability

N.A.

Bioaccumulative potential

N.A.

Mobility in soil

N.A.

Other adverse effects

None

13. DISPOSAL CONSIDERATIONS

Waste treatment and disposal methods

Recover, if possible. Send to authorised disposal plants or for incineration under controlled conditions. In so doing, comply with the local and national regulations currently in force.

14. TRANSPORT INFORMATION

UN number

ADR-UN Number: 1120

DOT number: UN1120

IATA-UN Number: 1120

IMDG-UN Number: 1120

UN proper shipping name

ADR-Shipping Name: BUTANOLS

DOT-Shipping Name: Butanols

IATA-Shipping Name: BUTANOLS

IMDG-Shipping Name: BUTANOLS

Transport hazard class(es)

ADR-Class: 3

DOT Hazard Class: 3

IATA-Class: 3

IMDG-Class: 3

Packing group

ADR-Packing Group: III

DOT Packing group: III

IATA-Packing group: III



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IMDG-Packing group: III
Environmental hazards
ADR-Environmental Pollutant: No
IMDG-Marine pollutant: No
Most important toxic component: CHROMATOGRAPHY SOLVENT
Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code)
N.A.
Special precautions
DOT Special provisions: B1, IB3, T2, TP1
ADR-Subsidiary risks: -
ADR-S.P.: -
ADR-Transport category (Tunnel restriction code): 3 (D/E)
IATA-Passenger Aircraft: 355
IATA-Subsidiary risks: -
IATA-Cargo Aircraft: 366
IATA-S.P.: A3
IATA-ERG: 3L
IMDG-EmS: F-E , S-D
IMDG-Subsidiary risks: -
IMDG-Stowage and handling: Category A
IMDG-Segregation: -

15. REGULATORY INFORMATION

USA - Federal regulations

TSCA - Toxic Substances Control Act

TSCA inventory: all the components are listed on the TSCA inventory.

TSCA listed substances:

butan-1-ol is listed in TSCA Section 12b

Formic Acid is listed in TSCA Section 12b.

SARA - Superfund Amendments and Reauthorization Act

Section 302 – Extremely Hazardous Substances: no substances listed.

Section 304 – Hazardous substances: butan-1-ol, Formic Acid.

Section 313 – Toxic chemical list: butan-1-ol, Formic Acid.

CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act

Substance(s) listed under CERCLA: butan-1-ol - Reportable quantity: 5000 pounds

Formic Acid - Reportable quantity: 5000 pounds.

Reportable quantity for mixture: 11111.11111 pounds.

CAA - Clean Air Act

CAA listed substances:

None.

CWA - Clean Water Act

CWA listed substances:

Formic Acid is listed in CWA Section 311.

USA - State specific regulations

California Proposition 65

Substance(s) listed under California Proposition 65:

None.

Massachusetts Right to know

Substance(s) listed under Massachusetts Right to know:

butan-1-ol

Formic Acid.

New Jersey Right to know

Substance(s) listed under New Jersey Right to know:

butan-1-ol

Formic Acid.

Pennsylvania Right to know



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Substance(s) listed under Pennsylvania Right to know:
butan-1-ol
Formic Acid.

16. OTHER INFORMATION

Full text of phrases referred to in Section 3:

- H226 Flammable liquid and vapour.
- H335 May cause respiratory irritation.
- H315 Causes skin irritation.
- H319 Causes serious eye irritation.
- H373 May cause damage to organs through prolonged or repeated exposure.
- H302 Harmful if swallowed.
- H336 May cause drowsiness or dizziness.
- H314 Causes severe skin burns and eye damage.
- H318 Causes serious eye damage.
- H290 May be corrosive to metals.

Safety Data Sheet dated 9/8/2017, version 1
Sections modified from the previous revision:

- 2. HAZARD(S) IDENTIFICATION
- 3. COMPOSITION/INFORMATION ON INGREDIENTS
- 5. FIRE-FIGHTING MEASURES
- 7. HANDLING AND STORAGE
- 8. EXPOSURE CONTROLS/PERSONAL PROTECTION
- 9. PHYSICAL AND CHEMICAL PROPERTIES
- 10. STABILITY AND REACTIVITY
- 11. TOXICOLOGICAL INFORMATION
- 12. ECOLOGICAL INFORMATION
- SECTION 14: Transport information
- 15. REGULATORY INFORMATION

Disclaimer:

The information contained herein is based on our state of knowledge at the above-specified date. It refers solely to the product indicated and constitutes no guarantee of particular quality. The information relates only to the specific material and may not be valid for such material used in combination with any other material or in any process.

This Safety Data Sheet cancels and replaces any preceding release.

ADR:	European Agreement concerning the International Carriage of Dangerous Goods by Road.
CAS:	Chemical Abstracts Service (division of the American Chemical Society).
CLP:	Classification, Labeling, Packaging.
DNEL:	Derived No Effect Level.
EINECS:	European Inventory of Existing Commercial Chemical Substances.
GHS:	Globally Harmonized System of Classification and Labeling of Chemicals.
HMIS:	Hazardous Materials Identification System
IARC:	International Agency for Research on Cancer
IATA:	International Air Transport Association.
IATA-DGR:	Dangerous Goods Regulation by the "International Air Transport Association" (IATA).
ICAO:	International Civil Aviation Organization.
ICAO-TI:	Technical Instructions by the "International Civil Aviation Organization"



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	(ICAO).
IMDG:	International Maritime Code for Dangerous Goods.
INCI:	International Nomenclature of Cosmetic Ingredients.
KSt:	Explosion coefficient.
LC50:	Lethal concentration, for 50 percent of test population.
LD50:	Lethal dose, for 50 percent of test population.
LTE:	Long-term exposure.
NFPA:	National Fire Protection Association
NIOSH:	National Institute for Occupational Safety and Health
NTP:	National Toxicology Program
OSHA:	Occupational Safety and Health Administration
PNEC:	Predicted No Effect Concentration.
RID:	Regulation Concerning the International Transport of Dangerous Goods by Rail.
STE:	Short-term exposure.
STEL:	Short Term Exposure limit.
STOT:	Specific Target Organ Toxicity.
TLV:	Threshold Limiting Value.
TWATLV:	Threshold Limit Value for the Time Weighted Average 8 hour day. (ACGIH Standard).