

# Safety Data Sheet

## Secondary Butyl Alcohol

Version 1.0

Date: 06/01/2015

### SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

**Product name** : Secondary Butanol  
**Product Use Description** : Alcohol solvent.

#### Manufacturer or supplier's details

**Company** : Solvents and Petroleum Services, Inc.

**Address** 1405 Brewerton Rd, Syracuse, NY 13208  
800-315-4467  
mark@solventsandpetroleum.com

#### Emergency telephone number:

Transport North America: CHEMTREC 800.424.9300

### SECTION 2. HAZARDS IDENTIFICATION

#### GHS Classification

Flammable liquids : Category 3  
Eye irritation : Category 2A  
Specific target organ toxicity - single exposure : Category 3 (Respiratory system, Central nervous system)

#### GHS Label element

Hazard pictograms :  

Signal word : Warning

Hazard statements : H226 Flammable liquid and vapor.  
H319 Causes serious eye irritation.  
H335 May cause respiratory irritation.  
H336 May cause drowsiness or dizziness.

Precautionary statements : **Prevention:**

## Safety Data Sheet

# Secondary Butyl Alcohol

Version 1.0

Date: 06/01/2015

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P233 Keep container tightly closed.

P240 Ground/bond container and receiving equipment.

P241 Use explosion-proof electrical/ ventilating/ lighting/ equipment.

P242 Use only non-sparking tools.

P243 Take precautionary measures against static discharge.

P261 Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.

P264 Wash skin thoroughly after handling.

P271 Use only outdoors or in a well-ventilated area.

P280 Wear protective gloves/ eye protection/ face protection.

### **Response:**

P303 + P361 + P353 IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.

P304 + P340 + P312 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/ physician 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.

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

P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.

### **Storage:**

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

P403 + P235 Store in a well-ventilated place. Keep cool.

P405 Store locked up.

### **Disposal:**

P501 Dispose of contents/ container to an approved waste disposal plant.

## 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.

## Safety Data Sheet

# Secondary Butyl Alcohol

Version 1.0

Date: 06/01/2015

**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
Odour	strong, sweet
Hazard Summary	No information available.

## SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

### Hazardous components

CAS-No.	Chemical Name	Concentration (%)
78-92-2	2-Butanol	90 - 100

**Synonyms** : Secondary Butanol R6K19  
: Secondary Butyl Alcohol

## SECTION 4. FIRST AID MEASURES

General advice : Show this safety data sheet to the doctor in attendance.  
Move out of dangerous area.

If inhaled : Consult a physician after significant exposure.

In case of skin contact : If on skin, rinse well with water.  
If on clothes, remove clothes.

In case of eye contact : Immediately flush eye(s) with plenty of water.  
Remove contact lenses.  
Protect unharmed eye.  
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.  
If symptoms persist, call a physician.

## Safety Data Sheet

# Secondary Butyl Alcohol

Version 1.0

Date: 06/01/2015

---

### SECTION 5. FIREFIGHTING MEASURES

- |   |  |
|---|--|
| Suitable extinguishing media                  | : Alcohol-resistant foam<br>Carbon dioxide (CO <sub>2</sub> )<br>Dry chemical  |
| 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                | : Use a water spray to cool fully closed containers.   |
| 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.<br>For safety reasons in case of fire, cans should be stored separately in closed containments. |
| Special protective equipment for firefighters | : Wear self-contained breathing apparatus for fire-fighting if necessary.  |

#### **NFPA Flammable and Combustible Liquids Classification:**

Flammable Liquid Class IC

---

### SECTION 6. ACCIDENTAL RELEASE MEASURES

- |   |   |
|---|---|
| Personal precautions, protective equipment and emergency procedures | : Use personal protective equipment.<br>Remove all sources of ignition.<br>Evacuate personnel to safe areas.<br>Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas. |
| Environmental precautions   | : Prevent product from entering drains.<br>Prevent further leakage or spillage if safe to do so.<br>If the product contaminates rivers and lakes or drains inform respective authorities.                             |

## Safety Data Sheet

# Secondary Butyl Alcohol

Version 1.0

Date: 06/01/2015

Methods and materials for containment and cleaning up : Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).

### SECTION 7. HANDLING AND STORAGE

Advice on safe handling : Avoid formation of aerosol.  
Do not breathe vapours/dust.  
Avoid exposure - obtain special instructions before use.  
Avoid contact with skin and eyes.  
For personal protection see section 8.  
Smoking, eating and drinking should be prohibited in the application area.  
Take precautionary measures against static discharges.  
Provide sufficient air exchange and/or exhaust in work rooms.  
Open drum carefully as content may be under pressure.  
Dispose of rinse water in accordance with local and national regulations.

Conditions for safe storage : No smoking.  
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.  
Observe label precautions.  
Electrical installations / working materials must comply with the technological safety standards.

### SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

#### Components with workplace control parameters

CAS-No.	Components	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
78-92-2	2-Butanol	TWA	100 ppm	ACGIH
		TWA	100 ppm 305 mg/m <sup>3</sup>	NIOSH REL
		ST	150 ppm 455 mg/m <sup>3</sup>	NIOSH REL

## Safety Data Sheet

### Secondary Butyl Alcohol

Version 1.0

Date: 06/01/2015

		TWA	150 ppm 450 mg/m <sup>3</sup>	OSHA Z-1
		TWA	100 ppm 305 mg/m <sup>3</sup>	OSHA P0

#### Personal protective equipment

Respiratory protection : No personal respiratory protective equipment normally required.

In the case of vapour formation use a respirator with an approved filter.

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/Physical State : liquid

Colour : colourless

Odour : strong, sweet

Odour Threshold : No data available

pH : No data available

Freezing Point (Melting point/freezing point) : -144 °C (-227 °F)

Boiling Point (Boiling point/boiling range) : 99.5 °C (211.1 °F)



## Safety Data Sheet

### Secondary Butyl Alcohol

Version 1.0

Date: 06/01/2015

Flash point	: 24 °C (75 °F)
Evaporation rate	: No data available
Flammability (solid, gas)	: No data available
Burning rate	: No data available
Upper explosion limit	: 9.8 %(V)
Lower explosion limit	: 1.7 %(V)
Vapour pressure	: 18.294 mmHg @ 25 °C (77 °F)
Relative vapour density	: 2.6
Relative density	: No data available
Density	: 0.808 g/cm <sup>3</sup> @ 20 °C (68 °F)
Bulk density	: 0.89 kg/m <sup>3</sup>
Solubility(ies)	
Water solubility	: soluble
Solubility in other sol- vents	: No data available
Partition coefficient: n- octanol/water	: No data available
Auto-ignition temperature	: 406 °C
Thermal decomposition	: No data available
Viscosity	
Viscosity, dynamic	: 4.2 mPa.s
Sublimation point (Sublimation point)	: No data available

---

#### SECTION 10. STABILITY AND REACTIVITY

Reactivity	: No dangerous reaction known under conditions of normal use.
------------	---

## Safety Data Sheet

# Secondary Butyl Alcohol

Version 1.0

Date: 06/01/2015

- Chemical stability : Stable under normal conditions.
- Possibility of hazardous reactions : Vapours may form explosive mixture with air.
- Conditions to avoid : Heat, flames and sparks.

---

### SECTION 11. TOXICOLOGICAL INFORMATION

#### Acute toxicity

##### **Components:**

##### **78-92-2:**

- Acute oral toxicity : LD50 (rat, male and female): 2,193 mg/kg  
Method: OECD Test Guideline 423  
GLP: yes
- Acute inhalation toxicity : Remarks: No data available
- Acute dermal toxicity : LD50 (rat, male and female): > 2,000 mg/kg  
Method: OECD Test Guideline 402  
GLP: yes

#### Skin corrosion/irritation

##### **Product:**

Remarks: May cause skin irritation in susceptible persons.

##### **Components:**

##### **78-92-2:**

Species: rabbit  
Exposure time: 4 h  
Method: OECD Test Guideline 404  
Result: No skin irritation  
GLP: yes

#### Serious eye damage/eye irritation

##### **Product:**

Remarks: Causes severe irritation to eyes in animal experiments.



## Safety Data Sheet

# Secondary Butyl Alcohol

Version 1.0

Date: 06/01/2015

### **Components:**

#### **78-92-2:**

Species: rabbit  
Result: Eye irritation  
Exposure time: 24 h  
Method: OECD Test Guideline 405  
GLP: yes

### **Respiratory or skin sensitisation**

### **Components:**

#### **78-92-2:**

Test Type: Maximization test  
Species: guinea pig  
Method: OECD Test Guideline 406 Result:  
Does not cause skin sensitisation.  
GLP: yes

### **Germ cell mutagenicity**

### **Components:**

#### **78-92-2:**

- Genotoxicity in vitro : Test Type: Ames test  
Test species: Salmonella typhimurium  
Metabolic activation: with and without metabolic activation  
Method: OECD Test Guideline 471  
Result: negative  
GLP: no
- : 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  
GLP: no
- Genotoxicity in vivo : Test Type: In vivo micronucleus test  
Test species: mouse (male and female)  
Application Route: Intraperitoneal  
Dose: 1.96 mL/kg  
Method: OECD Test Guideline 474  
Result: negative  
GLP: no  
Test substance: methyl ethyl ketone
- Germ cell mutagenicity-Assessment : Tests on bacterial or mammalian cell cultures did not show mutagenic effects.

## Safety Data Sheet

# Secondary Butyl Alcohol

Version 1.0

Date: 06/01/2015

### Carcinogenicity

#### **Components:**

##### **78-92-2:**

Remarks: This information is not available.

Carcinogenicity - Assessment : No evidence of carcinogenicity in animal studies.

### Reproductive toxicity

#### **Components:**

##### **78-92-2:**

Effects on fertility : Test Type: Two-generation study  
Species: rat, male and female  
Application Route: oral  
Dose: 0, 0.3, 1, 2, 3 % in water  
General Toxicity - Parent: NOAEL: 1  
General Toxicity F1: NOAEL: 1 % in water  
Symptoms: Reduced body weight  
Method: OECD Test Guideline 416  
GLP: no

Effects on foetal development : Species: rat  
Application Route: oral  
Dose: 0, 0.3, 1, 2 % in water  
General Toxicity Maternal: NOAEL: 1  
Teratogenicity: NOAEL: > 2  
Embryo-foetal toxicity.: NOAEL: 1  
Method: OECD Test Guideline 414  
Result: No teratogenic effects.  
GLP: no

Reproductive toxicity - Assessment : No evidence of adverse effects on sexual function and fertility, and on development, based on animal experiments.

### STOT - single exposure

#### Product:

No data available

#### **Components:**

##### **78-92-2:**

Exposure routes: Inhalation

Target Organs: Respiratory system

Assessment: May cause respiratory irritation., The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with respiratory tract irritation.



## Safety Data Sheet

# Secondary Butyl Alcohol

Version 1.0

Date: 06/01/2015

Exposure routes: Inhalation

Target Organs: Central nervous system

Assessment: May cause drowsiness or dizziness., The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with narcotic effects.

### STOT - repeated exposure

Product:

No data available

Components:

No data available

### Repeated dose toxicity

#### **Components:**

#### **78-92-2:**

Species: rat, male and female

NOAEL: 5041

Application Route: inhalation (vapour)

Exposure time: 90 d

Number of exposures: 6 h/d, 5 d/wk

Dose: 1254, 2518, 5041 ppm

Method: OECD Test Guideline 413

Test substance: methyl ethyl ketone

GLP: yes

### Aspiration toxicity

#### **Product:**

No aspiration toxicity classification

### Further information

#### **Product:**

Remarks: Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting., Concentrations substantially above the TLV value may cause narcotic effects., Solvents may degrease the skin.

## Safety Data Sheet

# Secondary Butyl Alcohol

Version 1.0

Date: 06/01/2015

### SECTION 12. ECOLOGICAL INFORMATION

#### Ecotoxicity

##### **Components:**

##### **78-92-2:**

- Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 2,993 mg/l  
Exposure time: 96 h  
Test Type: static test  
Method: OECD Test Guideline 203
- Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 308 mg/l  
Exposure time: 48 h  
Test Type: static test  
Test substance: methyl ethyl ketone  
Method: OECD Test Guideline 202  
GLP: yes
- Toxicity to algae : EC50 (Pseudokirchneriella subcapitata (green algae)): 1,972 mg/l  
End point: Growth rate  
Exposure time: 72 h  
Test Type: static test  
Method: OECD Test Guideline 201

#### Persistence and degradability

##### **Components:**

##### **78-92-2:**

- Biodegradability : aerobic  
Inoculum: Sewage  
Biodegradation: 86 %  
Exposure time: 5 d  
Test substance: SEC-BUTYL ALCOHOL  
GLP: no  
Remarks: Readily biodegradable

- BOD/COD : BOD/COD: 86 %

#### Bioaccumulative potential

##### **Components:**

##### **78-92-2:**

- Partition coefficient: n-octanol/water : log Pow: 0.146

## Safety Data Sheet

# Secondary Butyl Alcohol

Version 1.0

Date: 06/01/2015

### Mobility in soil

No data available

### 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 : No data available

---

## 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 Solvents & Petroleum Service, Inc.

Contaminated packaging : Empty remaining contents.  
Dispose of as unused product.  
Do not re-use empty containers.  
Do not burn, or use a cutting torch on, the empty drum.

---

## SECTION 14. TRANSPORT INFORMATION

**IATA (International Air Transport Association):** UN1120, Butanols, 3, II

**IMDG (International Maritime Dangerous Goods):** UN1120, BUTANOLS, 3, II, Flash Point: 24 °C(75 °F)

**DOT (Department of Transportation):** UN1120, Butanols, 3, II

# Safety Data Sheet

## Secondary Butyl Alcohol

Version 1.0

Date: 06/01/2015

### SECTION 15. REGULATORY INFORMATION

**OSHA Hazards** : Flammable liquid, Moderate eye irritant, Moderate respiratory 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** : Fire Hazard  
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:

78-92-2	2-Butanol	100 %
---------	-----------	-------

#### 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 SOCOMI Intermediate or Final VOC's (40 CFR 60.489):

78-92-2	2-Butanol	100 %
---------	-----------	-------

#### Clean Water Act

This product does not contain any Hazardous Substances listed under the U.S. Clean Water 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

78-92-2	2-Butanol	90 - 100 %
---------	-----------	------------

##### Pennsylvania Right To Know

## Safety Data Sheet

### Secondary Butyl Alcohol

Version 1.0

Date: 06/01/2015

78-92-2                      2-Butanol    90 - 100 %

#### New Jersey Right To Know

78-92-2                      2-Butanol    90 - 100 %

#### 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:

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

## Safety Data Sheet

# Secondary Butyl Alcohol

Version 1.0

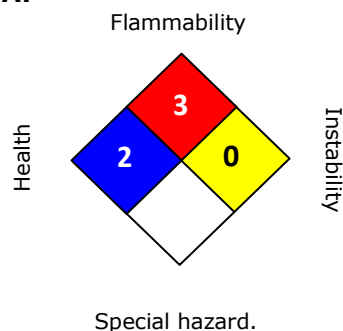
Date: 06/01/2015

<b>Korea. Korean Existing Chemicals Inventory (KECI)</b>	:	y (positive listing) (On the inventory, or in compliance with the inventory)
<b>Philippines Inventory of Chemicals and Chemical Substances (PICCS)</b>	:	y (positive listing) (On the inventory, or in compliance with the inventory)
<b>China. Inventory of Existing Chemical Substances in China (IECSC)</b>	:	y (positive listing) (On the inventory, or in compliance with the inventory)

### SECTION 16. OTHER INFORMATION

#### Further information

#### NFPA:



#### HMIS III:

<b>HEALTH</b>	<b>2</b>
<b>FLAMMABILITY</b>	<b>3</b>
<b>PHYSICAL HAZARD</b>	<b>0</b>

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 SDS has been prepared by SPS.



## Safety Data Sheet

### Secondary Butyl Alcohol

Version 1.0

Date: 06/01/2015

<b>Key or legend to abbreviations and acronyms used in the safety data sheet</b>			
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	NOAEL	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	PRNT	Presumed Not Toxic
GHS	Globally Harmonized System	RCRA	Resource Conservation Recovery Act
>=	Greater Than or Equal To	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%