

# • SAFETY DATA SHEET

Version 9.0  
Revision Date 03/16/2026  
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## SECTION 1. IDENTIFICATION

### 1.1 Product identifiers

Product name : Diisobutyl phthalate

Product Number : 43540  
Brand : Sigma-Aldrich  
Index-No. : 607-623-00-2  
CAS-No. : 84-69-5

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

Identified uses : Laboratory chemicals, Synthesis of substances

Uses advised against : The product is being supplied under the TSCA R&D Exemption (40 CFR Section 720.36). It is the recipient's responsibility to comply with the requirements of the R&D exemption. The product may not be used for a non-exempt commercial purpose under TSCA unless appropriate consent is granted in writing by MilliporeSigma.

### 1.3 Details of the supplier of the safety data sheet

Company : Sigma-Aldrich Inc.  
3050 SPRUCE ST  
ST. LOUIS MO 63103  
UNITED STATES

Telephone : +1 314 771-5765  
Fax : +1 800 325-5052

### 1.4 Emergency telephone number

Emergency Phone # : 800-424-9300 CHEMTREC (USA) +1-703-  
527-3887 CHEMTREC (International) 24  
Hours/day; 7 Days/week

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## SECTION 2. HAZARDS IDENTIFICATION

### GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)

#### Hazards for the product as supplied

Reproductive toxicity : Category 1B


Short-term (acute) aquatic hazard : Category 1

Long-term (chronic) aquatic hazard : Category 1

**Other hazards**

None known.

**GHS label elements**

Hazard pictograms : 

Signal word : Danger

Hazard statements : H360 May damage fertility or the unborn child.  
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements : **Prevention:**  
P201 Obtain special instructions before use.  
P202 Do not handle until all safety precautions have been read and understood.  
P273 Avoid release to the environment.  
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.  
**Response:**  
P308 + P313 IF exposed or concerned: Get medical advice/ attention.  
P391 Collect spillage.  
**Storage:**  
P405 Store locked up.  
**Disposal:**  
P501 Dispose of contents/ container to an approved waste disposal plant.

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**SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**

Substance / Mixture : Substance

CAS-No. : 84-69-5

**Components**

| Chemical name | CAS No./Unique ID | Concentration (% w/w) | Trade secret |
|---------------|-------------------|-----------------------|--------------|
|               |                   |                       |              |

|                          |          |                |     |
|--------------------------|----------|----------------|-----|
| 2-Methylpropyl phthalate | 84-69-5* | >= 80 - <= 100 | TSC |
|--------------------------|----------|----------------|-----|

\* Indicates that the identifier is a CAS No.

TSC- the actual concentration or concentration range is withheld as a trade secret

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#### SECTION 4. FIRST AID MEASURES

|   |   |  |
|---|---|--|
| General advice  | : | Show this safety data sheet to the doctor in attendance.   |
| If inhaled  | : | After inhalation: fresh air. Call in physician.  |
| In case of skin contact                                     | : | In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower. Consult a physician. |
| In case of eye contact                                      | : | After eye contact: rinse out with plenty of water. Call in ophthalmologist. Remove contact lenses.                           |
| If swallowed  | : | After swallowing: immediately make victim drink water (two glasses at most). Consult a physician.                            |
| Most important symptoms and effects, both acute and delayed | : | The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11          |
| Protection of first-aiders                                  | : | For personal protection see section 8.   |
| Notes to physician  | : | No data available  |

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#### SECTION 5. FIREFIGHTING MEASURES

|                                       |   |  |
|---------------------------------------|---|--|
| Suitable extinguishing media          | : | Water<br>Foam<br>Carbon dioxide (CO <sub>2</sub> )<br>Dry powder             |
| Unsuitable extinguishing media        | : | For this substance/mixture no limitations of extinguishing agents are given. |
| Specific hazards during fire fighting | : | Combustible.   |

Vapours are heavier than air and may spread along floors.

Forms explosive mixtures with air on intense heating.

Development of hazardous combustion gases or vapours possible in the event of fire.

|  |   |   |
|--|---|---|
| Hazardous combustion products                  | : | Carbon oxides   |
| Specific extinguishing methods                 | : | No data available   |
| Further information                            | : | Prevent fire extinguishing water from contaminating surface water or the ground water system.   |
| Special protective equipment for fire-fighters | : | Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing. |

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## SECTION 6. ACCIDENTAL RELEASE MEASURES

|   |   |  |
|---|---|--|
| Personal precautions, protective equipment and emergency procedures | : | Advice for non-emergency personnel:<br>Do not breathe vapours, aerosols.<br>Avoid substance contact.<br>Ensure adequate ventilation.<br>Evacuate the danger area, observe emergency procedures, consult an expert.<br>Advice for emergency responders:<br>For personal protection see section 8. |
| Environmental precautions   | : | Do not let product enter drains.   |
| Methods and materials for containment and cleaning up               | : | Cover drains. Collect, bind, and pump off spills.<br>Observe possible material restrictions (see sections 7 and 10).<br>Take up carefully with liquid-absorbent material (e.g. Chemizorb®). Dispose of properly. Clean up affected area.   |

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## SECTION 7. HANDLING AND STORAGE

For precautions see section 2.2.

|   |   |   |
|---|---|---|
| Advice on safe handling                   | : | Work under hood. Do not inhale substance/mixture. Avoid generation of vapours/aerosols.   |
| 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. Handle under argon. |
| Further information on storage conditions | : | Tightly closed. Keep in a well-ventilated place. Keep locked up or in an area accessible only to qualified or authorised persons.   |
| Storage class                             | : | 6.1C, Combustible, acute toxic Cat.3 / toxic compounds or compounds which causing chronic effects   |
| Recommended storage temperature           | : | 59 - 77 °F / 15 - 25 °C   |
|   |   | /   |
| Further information on storage stability  | : | Moisture sensitive.<br><br>Store under argon.   |

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## SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Ingredients with workplace control parameters

Contains no substances with occupational exposure limit values.

**Engineering measures** : No data available

### Personal protective equipment

Respiratory protection : required when vapours/aerosols are generated.

Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system.

Recommended Filter type: : Filter type ABEK

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to

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the instructions of the producer. These measures have to be properly documented.

#### Hand protection

Material : Nitrile rubber  
Break through time : 10 min  
Glove thickness : 0.11 mm  
Protective index : Splash contact  
Manufacturer : Dermatril® (KCL 740 / Aldrich Z677272, Size M)

Material : Nitrile rubber  
Break through time : 480 min  
Glove thickness : 0.4 mm  
Protective index : Full contact  
Manufacturer : Camatril® (KCL 730 / Aldrich Z677442, Size M)

Remarks : This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN 16523-1 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: [www.kcl.de](http://www.kcl.de)).

Eye protection : Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).  
Safety glasses

Skin and body protection : protective clothing

Hygiene measures : Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

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## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : liquid

Color : colourless

Odor : weak

Odor Threshold : No data available  
pH : neutral

Melting point/ range : -83 °F / -64 °C

Boiling point/boiling range : 621 °F / 327 °C (1,013 hPa)

Flash point : 228 °F / 109 °C  
Method: closed cup

Evaporation rate : No data available

Flammability (solid, gas) : No data available

Flammability (liquids) : No data available

Burning rate : No data available

Self-ignition : 793 °F / 423 °C  
1,013 hPa

Upper explosion limit /  
Upper flammability limit : Upper explosion limit  
3.2 %(V)

Lower explosion limit /  
Lower flammability limit : Lower explosion limit  
0.8 %(V)

Vapor pressure : 0.11 hPa (212 °F / 100 °C)

Relative vapour density : No data available

Relative density : No data available

Density : 1.039 g/cm<sup>3</sup> (68 °F / 20 °C)

Solubility(ies)  
Water solubility : 0.02 g/l slightly soluble (68 °F / 20 °C)  
Method: OECD Test Guideline 105

Partition coefficient: n-  
octanol/water : log Pow: 4.11 (68 °F / 20 °C)  
Method: OECD Test Guideline 107  
Potential bioaccumulation

Autoignition temperature : 793 °F / 423 °C (1,013.25 hPa)

Decomposition  
temperature : No data available

Viscosity  
Viscosity, dynamic : No data available

Viscosity, kinematic : 13.96 mm<sup>2</sup>/s (104 °F / 40 °C)

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Method: OECD Test Guideline 114

40.95 mm<sup>2</sup>/s (68 °F / 20 °C)

Method: OECD Test Guideline 114

|                          |   |                              |
|--------------------------|---|------------------------------|
| Flow time                | : | No data available            |
| Explosive properties     | : | Not classified as explosive. |
| Oxidizing properties     | : | none                         |
| Molecular weight         | : | 278.34 g/mol                 |
| Particle characteristics | : |                              |
| Particle size            | : | No data available            |

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## SECTION 10. STABILITY AND REACTIVITY

|                                    |   |   |
|------------------------------------|---|---|
| Reactivity                         | : | Forms explosive mixtures with air on intense heating.<br><br>A range from approx. 15 Kelvin below the flash point is to be rated as critical. |
| Chemical stability                 | : | The product is chemically stable under standard ambient conditions (room temperature) .   |
| Possibility of hazardous reactions | : | No data available   |
| Conditions to avoid                | : | Strong heating.   |
| Incompatible materials             | : | Strong oxidizing agents   |
| Hazardous decomposition products   | : | In the event of fire: see section 5   |

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## SECTION 11. TOXICOLOGICAL INFORMATION

### 11.1 Information on toxicological effects

#### Acute toxicity

LD50 Oral - Rat - male and female - 10,392 mg/kg

(OECD Test Guideline 401)

Inhalation: No data available

LD50 Dermal - Guinea pig - 10,000 mg/kg

Remarks: (RTECS)

#### Skin corrosion/irritation

Skin - In vitro study

Result: non-corrosive - 4 h

(OECD Test Guideline 431)

### **Serious eye damage/eye irritation**

Eyes - Rabbit

Result: No eye irritation

(OECD Test Guideline 405)

### **Respiratory or skin sensitization**

Sensitisation test: - Guinea pig

Result: negative

(OECD Test Guideline 406)

### **Germ cell mutagenicity**

Test Type: Ames test

Test system: Salmonella typhimurium

Metabolic activation: with and without metabolic activation

Result: negative

Remarks: (ECHA)

### **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.

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.

OSHA: No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

### **Reproductive toxicity**

May damage the unborn child.

Suspected of damaging fertility.

### **Specific target organ toxicity - single exposure**

No data available

### **Specific target organ toxicity - repeated exposure**

No data available

### **Aspiration hazard**

No data available

## **11.2 Additional Information**

RTECS: TI1225000

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Handle in accordance with good industrial hygiene and safety practice.

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## SECTION 12. ECOLOGICAL INFORMATION

### Ecotoxicity

#### Components:

##### **2-Methylpropyl phthalate:**

- Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 0.9 mg/l  
Exposure time: 96 h  
Test Type: flow-through test  
Analytical monitoring: yes  
Remarks: (ECHA)
- Toxicity to algae/aquatic plants : ErC50 (Desmodesmus subspicatus (green algae)): 1.7 mg/l  
Exposure time: 72 h  
Test Type: static test  
Analytical monitoring: yes  
Method: OECD Test Guideline 201  
GLP: yes
- M-Factor (Acute aquatic toxicity) : 1
- Toxicity to fish (Chronic toxicity) : NOEC (Oncorhynchus mykiss (rainbow trout)): 0.1 mg/l  
End point: Growth inhibition  
Exposure time: 99 d  
Analytical monitoring: yes  
Method: US-EPA  
GLP: yes  
Remarks: The value is given in analogy to the following substances:  
The value is given in analogy to the following substances: dibutyl phthalate
- Toxicity to microorganisms : NOEC (activated sludge): 14.5 mg/l  
Exposure time: 14 d  
Test Type: static test  
GLP: yes  
Remarks: (ECHA)

### Ecotoxicology Assessment

- Chronic aquatic toxicity : Very toxic to aquatic life with long lasting effects.

### Persistence and degradability

#### Components:

##### **2-Methylpropyl phthalate:**

- Biodegradability : aerobic

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Inoculum: activated sludge, non-adapted  
Concentration: 2 mg/l  
Result: Readily biodegradable.  
Biodegradation: 66 - 70 %  
Exposure time: 28 d  
Method: OECD Test Guideline 301D

### **Bioaccumulative potential**

#### **Components:**

##### **2-Methylpropyl phthalate:**

Partition coefficient: n- : log Pow: 4.11 (68 °F / 20 °C)  
octanol/water : Method: OECD Test Guideline 107  
Remarks: Potential bioaccumulation

#### **Mobility in soil**

No data available

#### **Other adverse effects**

#### **Product:**

Ozone-Depletion Potential : 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).

#### **Components:**

##### **2-Methylpropyl phthalate:**

Additional ecological : Discharge into the environment must be avoided.  
information

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## **SECTION 13. DISPOSAL CONSIDERATIONS**

### **Disposal methods**

Waste from residues : Waste material must be disposed of in accordance  
with the national and local regulations. Leave  
chemicals in original containers. No mixing with other  
waste. Handle uncleaned containers like the product  
itself.

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## **SECTION 14. TRANSPORT INFORMATION**

### **International Regulations**

#### **IATA-DGR**

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UN/ID No. : UN 3082  
Proper shipping name : Environmentally hazardous substance, liquid, n.o.s.  
(2-Methylpropyl phthalate)  
Class : 9  
Packing group : III  
Labels : Class 9 - Miscellaneous dangerous substances and  
articles  
Packing instruction (cargo : 964  
aircraft)  
Packing instruction : 964  
(passenger aircraft)

**IMDG-Code**

UN number : UN 3082  
Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE,  
LIQUID, N.O.S.  
(2-Methylpropyl phthalate)  
Class : 9  
Packing group : III  
Labels : 9  
EmS Code : F-A, S-F  
Marine pollutant : yes

**Transport in bulk according to IMO instruments**

Not applicable for product as supplied.

**National Regulations**

**49 CFR Road**

Not regulated as a dangerous good

Poison Inhalation Hazard : No

**Special precautions for user**

Remarks : EHS-Mark required (ADR 2.2.9.1.10, IMDG code  
2.10.3) for single packagings and combination  
packagings containing inner packagings with  
Dangerous Goods > 5L for liquids or > 5kg for solids.  
Packages smaller than or equal to 5 kg / L , not  
dangerous goods of Class 9

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

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**SECTION 15. REGULATORY INFORMATION**

**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.

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## **SARA 302 Extremely Hazardous Substances Threshold Planning Quantity**

This material does not contain any components with a section 302 EHS TPQ.

**SARA 311/312 Hazards** : Chronic Health Hazard

**SARA 313** : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

### **Clean Air Act**

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).

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (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).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCOMI Intermediate or Final VOC's (40 CFR 60.489).

### **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. CleanWater Act, Section 311, Table 117.3.

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

This product does not contain any priority pollutants related to the U.S. Clean Water Act

### **US State Regulations**

#### **Massachusetts Right To Know**

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

#### **Maine Chemicals of High Concern**

Product does not contain any listed chemicals

#### **Vermont Chemicals of High Concern**

2-Methylpropyl phthalate 84-69-5

#### **Washington Chemicals of High Concern**

2-Methylpropyl phthalate 84-69-5

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

US TSCA : All substances listed as active on the TSCA inventory

#### **TSCA list**

No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

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## SECTION 16. OTHER INFORMATION

### Relevant changes since previous version

#### 8. Exposure controls/personal protection

### Full text of other abbreviations

AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); EC<sub>x</sub> - Concentration associated with x% response; EHS - Extremely Hazardous Substance; EL<sub>x</sub> - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErC<sub>x</sub> - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonised System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC<sub>50</sub> - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organisation; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardisation; KECI - Korea Existing Chemicals Inventory; LC<sub>50</sub> - Lethal Concentration to 50 % of a test population; LD<sub>50</sub> - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organisation for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

The information is believed to be correct but is not exhaustive and will be used solely as a guideline, which is based on current knowledge of the chemical substance or mixture and is applicable to appropriate safety precautions for the product. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See [www.sigma-aldrich.com](http://www.sigma-aldrich.com) and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

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