SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form : Substance
Physical state : Liquid
Substance name : TETRAKIS(DIETHYLAMINO)TIN, 95%
Product code : SNT7294
Formula : C16H40N4Sn
Synonyms : OCTAETHYLSTANNANETETRAAMINE; TIN IV DIETHYLAMIDE
Chemical family : ORGANOTIN

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

1.2.1. Relevant identified uses

Use of the substance/mixture : Chemical intermediate

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

GELEST, INC.
11 East Steel Road
Morrisville, PA 19067
USA
T 215-547-1015 - F 215-547-2484 - (M-F): 8:00 AM - 5:30 PM EST
info@gelest.com - www.gelest.com

GELEST INC.
Fritz-Klatte-Strasse 8
65933 Frankfurt
Germany
T +49 (0) 69 3535106-500 - F +49 (0) 69 3535106-501 - (M-F): 8:00 AM - 4:00 PM
info@gelestde.com - www.gelestde.com

1.4. Emergency telephone number

Emergency number : CHEMTREC: 1-800-424-9300 (USA); +1 703-527-3887 (International)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]
Flammable liquids, Category 3 : H226
Skin corrosion/irritation, Category 2 : H315
Serious eye damage/eye irritation, Category 2 : H319

Full text of H statements : see section 16

Adverse physicochemical, human health and environmental effects
No additional information available

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]
Hazard pictograms (CLP) : GHS02 - GHS07

Signal word (CLP) : Warning
Hazard statements (CLP) : H226 - Flammable liquid and vapour.
H315 - Causes skin irritation.
H319 - Causes serious eye irritation.
Precautionary statements (CLP)

P280 - Wear protective gloves/protective clothing/eye protection/face protection.
P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P240 - Ground/bond container and receiving equipment.
P264 - Wash hands thoroughly after handling.
P303+P361+P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

EUH-statements

EUH014 - Reacts violently with water.

2.3. Other hazards

No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substances

Name: TETRAKIS(DIETHYLAMINO)TIN, 95%
CAS-No.: 1066-78-0

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
<th>Classification according to Regulation (EC) No. 1272/2008 [CLP]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tetrakis(diethylamino)tin</td>
<td>(CAS-No.) 1066-78-0</td>
<td>90 - 100</td>
<td>Flam. Liq. 3, H226 Skin Irrit. 2, H315 Eye Irrit. 2, H319</td>
</tr>
<tr>
<td>Other Organotins</td>
<td></td>
<td>0 - 10</td>
<td>Not classified</td>
</tr>
</tbody>
</table>

Full text of H-statements: see section 16

3.2. Mixtures

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general: Remove contaminated clothing and shoes. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). If possible show this sheet; if not available show packaging or label.

First-aid measures after inhalation: Remove person to fresh air and keep comfortable for breathing. If you feel unwell, seek medical advice.

First-aid measures after skin contact: Wash with plenty of water/…. Get medical advice/attention.

First-aid measures after eye contact: Immediately flush eyes thoroughly with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical advice/attention.

First-aid measures after ingestion: Never give anything by mouth to an unconscious person. Get medical advice/attention.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/effects after inhalation: May cause irritation to the respiratory tract. Acute effects may be associated with the hydrolysis product, dimethylamine.

Symptoms/effects after skin contact: Causes skin irritation. Organotins may be absorbed through the skin.

Symptoms/effects after eye contact: Causes serious eye irritation.

Symptoms/effects after ingestion: May be harmful if swallowed.

4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media: Alcohol-resistant foam. Carbon dioxide. Dry chemical.

Unsuitable extinguishing media: Water.

5.2. Special hazards arising from the substance or mixture

Fire hazard: Flammable liquid and vapour. Irritating fumes and organic acid vapors may develop when material is exposed to elevated temperatures or open flame.

Explosion hazard: May form flammable/explosive vapour-air mixture.
TETRAKIS(DIETHYLAMINO)TIN, 95%
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5.3. Advice for firefighters
Firefighting instructions: Exercise caution when fighting any chemical fire.
Protection during firefighting: Do not enter fire area without proper protective equipment, including respiratory protection. Avoid all eye and skin contact and do not breathe vapour and mist.
Other information: Absorption of this compound onto combustible material such as paper goods can cause fires if there is subsequent exposure to moisture. Reacts vigorously with water, liberating dimethylamine.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures
General measures: Eliminate every possible source of ignition. Use special care to avoid static electric charges.

6.1.1. For non-emergency personnel
Protective equipment: Wear protective equipment as described in Section 8.
Emergency procedures: Evacuate unnecessary personnel.

6.1.2. For emergency responders
Protective equipment: Do not attempt to take action without suitable protective equipment. Equip cleanup crew with proper protection. For further information refer to section 8: "Exposure controls/personal protection".

6.2. Environmental precautions
Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up
For containment: Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams.
Methods for cleaning up: Clean up any spills as soon as possible, using an absorbent material to collect it. Sweep or shovel spills into appropriate container for disposal. Use only non-sparking tools.

6.4. Reference to other sections
See Heading 8. Exposure controls and personal protection.

SECTION 7: Handling and storage

7.1. Precautions for safe handling
Additional hazards when processed: Handle empty containers with care because residual vapours are flammable. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Precautions for safe handling: Ground/bond container and receiving equipment. Avoid all eye and skin contact and do not breathe vapour and mist. Provide good ventilation in process area to prevent formation of vapour. Take precautionary measures against static discharge. Use only non-sparking tools.
Hygiene measures: Wash contaminated clothing before reuse. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

7.2. Conditions for safe storage, including any incompatibilities
Technical measures: Proper grounding procedures to avoid static electricity should be followed. Use explosion-proof electrical equipment.
Storage conditions: Keep container tightly closed. Keep in a cool place.
Storage area: Store in a well-ventilated place. Store away from heat.

7.3. Specific end use(s)
No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

<table>
<thead>
<tr>
<th>Substance</th>
<th>ACGIH TWA (mg/m³)</th>
<th>OSHA PEL (TWA) (mg/m³)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tetrakis(diethylamino)tin (1066-78-0)</td>
<td>0.1 mg/m³ as tin</td>
<td>0.1 mg/m³ as tin</td>
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</table>

Other Organotins

<table>
<thead>
<tr>
<th>Substance</th>
<th>ACGIH TWA (mg/m³)</th>
<th>OSHA PEL (TWA) (mg/m³)</th>
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</thead>
<tbody>
<tr>
<td>Italy - Portugal - USA ACGIH</td>
<td>0.1 mg/m³ as tin</td>
<td></td>
</tr>
</tbody>
</table>

Print date: 11/04/2019 EN (English) SDS ID: SNT7294 3/9
8.2. Exposure controls

Appropriate engineering controls:
Provide local exhaust or general room ventilation.

Personal protective equipment:
Avoid all unnecessary exposure. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.

Hand protection:
Neoprene or nitrile rubber gloves

Eye protection:
Chemical goggles. Contact lenses should not be worn

Skin and body protection:
Wear suitable protective clothing

Respiratory protection:
Where exposure through inhalation may occur from use, respiratory protection equipment is recommended. NIOSH-certified combination organic vapor - amine gas (brown cartridge) respirator.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>Liquid</td>
</tr>
<tr>
<td>Appearance</td>
<td>Liquid</td>
</tr>
<tr>
<td>Molecular mass</td>
<td>407.2 g/mol</td>
</tr>
<tr>
<td>Colour</td>
<td>Pale yellow liquid to dark orange-brown.</td>
</tr>
<tr>
<td>Odour</td>
<td>Acrid, Dimethylamine.</td>
</tr>
<tr>
<td>Odour threshold</td>
<td>No data available</td>
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<tr>
<td>Refractive index</td>
<td>1.48</td>
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<tr>
<td>pH</td>
<td>No data available</td>
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<td>Relative evaporation rate (butylacetate=1)</td>
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</tr>
<tr>
<td>Melting point</td>
<td>&lt; 0 °C</td>
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<tr>
<td>Freezing point</td>
<td>No data available</td>
</tr>
<tr>
<td>Boiling point</td>
<td>90 °C @ 0.05 mm Hg</td>
</tr>
<tr>
<td>Flash point</td>
<td>39 °C</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Flammable liquid and vapour.</td>
</tr>
<tr>
<td>Vapour pressure</td>
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<tr>
<td>Relative vapour density at 20 °C</td>
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<tr>
<td>Relative density</td>
<td>1.104</td>
</tr>
<tr>
<td>Solubility</td>
<td>Reacts with water.</td>
</tr>
<tr>
<td>Log Pow</td>
<td>No data available</td>
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<tr>
<td>Log Kow</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity, kinematic</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity, dynamic</td>
<td>No data available</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>No data available</td>
</tr>
<tr>
<td>Oxidising properties</td>
<td>No data available</td>
</tr>
<tr>
<td>Explosive limits</td>
<td>No data available</td>
</tr>
</tbody>
</table>

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No additional information available

10.2. Chemical stability

Stable in sealed containers.
TETRAKIS(DIETHYLAMINO)TIN, 95%
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10.3. Possibility of hazardous reactions
Reacts with moisture and air.

10.4. Conditions to avoid
Heat. Open flame. Sparks.

10.5. Incompatible materials

10.6. Hazardous decomposition products
Amines. Organic acid vapors.

SECTION 11: Toxicological information

11.1. Information on toxicological effects
Acute toxicity : Not classified
Skin corrosion/irritation : Causes skin irritation.
Serious eye damage/irritation : Causes serious eye irritation.
Respiratory or skin sensitisation : Not classified
Germ cell mutagenicity : Not classified
Carcinogenicity : Not classified
Reproductive toxicity : Not classified
STOT-single exposure : Not classified
STOT-repeated exposure : Not classified
Aspiration hazard : Not classified
Symptoms/effects after inhalation : May cause irritation to the respiratory tract. Acute effects may be associated with the hydrolysis product, dimethylamine.
Symptoms/effects after skin contact : Causes skin irritation. Organotins may be absorbed through the skin.
Symptoms/effects after eye contact : Causes serious eye irritation.
Symptoms/effects after ingestion : May be harmful if swallowed.
Reason for classification : Expert judgment

SECTION 12: Ecological information

12.1. Toxicity
Acute aquatic toxicity : Not classified
Chronic aquatic toxicity : Not classified

12.2. Persistence and degradability
No additional information available

12.3. Bioaccumulative potential
No additional information available

12.4. Mobility in soil
No additional information available

12.5. Results of PBT and vPvB assessment
No additional information available

12.6. Other adverse effects
Other adverse effects : This substance may be hazardous to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods
Sewage disposal recommendations : Do not dispose of waste into sewer.
Product/Packaging disposal recommendations : Dispose in a safe manner in accordance with local/national regulations. Dispose of contents/container to licensed waste disposal facility.
Additional information : Handle empty containers with care because residual vapours are flammable.
Ecology - waste materials : Avoid release to the environment.

SECTION 14: Transport information

14.1. UN number
In accordance with ADR / RID / IMDG / IATA / ADN
# TETRAKIS(DIETHYLAMINO)TIN, 95%

## Safety Data Sheet

### 14.1. UN number

<table>
<thead>
<tr>
<th>UN-No. (ADR)</th>
<th>1993</th>
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<tbody>
<tr>
<td>UN-No. (IMDG)</td>
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<td>UN-No. (IATA)</td>
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<td>UN-No. (ADN)</td>
<td>1993</td>
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<tr>
<td>UN-No. (RID)</td>
<td>1993</td>
</tr>
</tbody>
</table>

### 14.2. UN proper shipping name

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<tr>
<th>Proper Shipping Name (ADR)</th>
<th>FLAMMABLE LIQUID, N.O.S.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proper Shipping Name (IMDG)</td>
<td>FLAMMABLE LIQUID, N.O.S.</td>
</tr>
<tr>
<td>Proper Shipping Name (IATA)</td>
<td>Flammable liquid, n.o.s.</td>
</tr>
<tr>
<td>Proper Shipping Name (ADN)</td>
<td>FLAMMABLE LIQUID, N.O.S.</td>
</tr>
<tr>
<td>Proper Shipping Name (RID)</td>
<td>FLAMMABLE LIQUID, N.O.S.</td>
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</tbody>
</table>


Transport document description (IATA): UN 1993 Flammable liquid, n.o.s. (TETRAKIS(DIETHYLAMINO)TIN), 3, III


### 14.3. Transport hazard class(es)

#### ADR

Transport hazard class(es) (ADR): 3

Danger labels (ADR): 3

#### IMDG

Transport hazard class(es) (IMDG): 3

Danger labels (IMDG): 3

#### IATA

Transport hazard class(es) (IATA): 3

Hazard labels (IATA): 3

#### ADN

Transport hazard class(es) (ADN): 3

Danger labels (ADN): 3

#### RID

Transport hazard class(es) (RID): 3
TETRAKIS(DIETHYLAMINO)TIN, 95%
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Danger labels (RID) : 3

14.4. Packing group

Packing group (ADR) : III
Packing group (IMDG) : III
Packing group (IATA) : III
Packing group (ADN) : III
Packing group (RID) : III

14.5. Environmental hazards

Dangerous for the environment : No
Marine pollutant : No
Other information : No supplementary information available

14.6. Special precautions for user

- Overland transport
  Classification code (ADR) : F1
  Special provisions (ADR) : 274, 601, 640E
  Limited quantities (ADR) : 5l
  Excepted quantities (ADR) : E1
  Packing instructions (ADR) : P001, IBC03, LP01, R001
  Mixed packing provisions (ADR) : MP19
  Portable tank and bulk container instructions (ADR) : T4
  Portable tank and bulk container special provisions (ADR) : TP1, TP29
  Tank code (ADR) : LGBF
  Vehicle for tank carriage : FL
  Transport category (ADR) : 3
  Special provisions for carriage - Packages (ADR) : V12
  Special provisions for carriage - Operation (ADR) : S2
  Hazard identification number (Kemler No.) : 30
  Orange plates :

  Tunnel restriction code (ADR) : D/E

- Transport by sea
  Special provisions (IMDG) : 223, 274, 955
  Limited quantities (IMDG) : 5 L
  Excepted quantities (IMDG) : E1
  Packing instructions (IMDG) : P001, LP01
  IBC packing instructions (IMDG) : IBC03
  Tank instructions (IMDG) : T4
  Tank special provisions (IMDG) : TP1, TP29
  EmS-No. (Fire) : F-E
  EmS-No. (Spillage) : S-E
  Stowage category (IMDG) : A

- Air transport
  PCA Excepted quantities (IATA) : E1
  PCA Limited quantities (IATA) : Y344
TETRAKIS(DIETHYLAMINO)TIN, 95%
Safety Data Sheet

PCA limited quantity max net quantity (IATA) : 10L
PCA packing instructions (IATA) : 355
PCA max net quantity (IATA) : 60L
CAO packing instructions (IATA) : 366
CAO max net quantity (IATA) : 220L
Special provisions (IATA) : A3
ERG code (IATA) : 3L

- Inland waterway transport
  Classification code (ADN) : F1
  Special provisions (ADN) : 274, 601, 640E
  Limited quantities (ADN) : 5 L
  Excepted quantities (ADN) : E1
  Carriage permitted (ADN) : T
  Equipment required (ADN) : PP, EX, A
  Ventilation (ADN) : VE01
  Number of blue cones/lights (ADN) : 0

- Rail transport
  Classification code (RID) : F1
  Special provisions (RID) : 274, 601, 640E
  Limited quantities (RID) : 5L
  Excepted quantities (RID) : E1
  Packing instructions (RID) : P001, IBC03, LP01, R001
  Mixed packing provisions (RID) : MP19
  Portable tank and bulk container instructions (RID) : T4
  Portable tank and bulk container special provisions (RID) : TP1, TP29
  Tank codes for RID tanks (RID) : LGBF
  Transport category (RID) : 3
  Special provisions for carriage – Packages (RID) : W12
  Colis express (express parcels) (RID) : CE4
  Hazard identification number (RID) : 30

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code
Not applicable

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

15.1.1. EU-Regulations

No REACH Annex XVII restrictions
TETRAKIS(DIETHYLAMINO)TIN, 95% is not on the REACH Candidate List
TETRAKIS(DIETHYLAMINO)TIN, 95% is not on the REACH Annex XIV List
TETRAKIS(DIETHYLAMINO)TIN, 95% is not subject to REGULATION (EU) No 649/2012 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 4 July 2012 concerning the export and import of hazardous chemicals.

15.1.2. National regulations

Germany
12th Ordinance Implementing the Federal Immission Control Act - 12.BImSchV : Is not subject of the 12. BImSchV (Hazardous Incident Ordinance)

Netherlands
SZW-lijst van kankerverwekkende stoffen : The substance is not listed
SZW-lijst van mutagene stoffen : The substance is not listed
NIET-limietvlieu lijst van voor de voortplanting giftige stoffen – Borstvoeding : The substance is not listed
The substance is not listed

The substance is not listed

Class II-1

5 liter

R10 <H226;H315;H319>; Emergency management guidelines for the storage of flammable liquids must be followed

Classification remarks

Denmark

The substance is not listed

The substance is not listed

The substance is not listed

The substance is not listed

The substance is not listed

The substance is not listed

No additional information available

SECTION 16: Other information

Abbreviations:

Abbreviations: ND: Not Determined, No Data; NA: Not Applicable; LD: Lethal Dose; LC: Lethal Concentration; ATE: Acute Toxicity Estimates; H: hour; °: °C unless otherwise stated; mm: millimeters Hg, torr; PEL: permissible exposure level; TWA: time weighted average; TLV: threshold limit value; TG: Test Guideline; NIOSH: National Institute for Occupational Safety and Health; IARC: International Agency for Research on Cancer; NTP: National Toxicology Program; HMIS: Hazardous Material Information System; CAS No.: Chemical Abstract Service Registration Number; EC No.: European Commission Registration Number; EC Index No.: European Commission Index Number; OECD: The Organisation for Economic Co-operation and Development; GHS: The Globally Harmonized System of Classification and Labelling; APF: Assigned Protection Factor

Prepared by safety and environmental affairs.

Full text of H- and EUH-statements:

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>H226</td>
<td>Flammable liquid and vapour.</td>
</tr>
<tr>
<td>H315</td>
<td>Causes skin irritation.</td>
</tr>
<tr>
<td>H319</td>
<td>Causes serious eye irritation.</td>
</tr>
<tr>
<td>EUH014</td>
<td>Reacts violently with water.</td>
</tr>
<tr>
<td>Flm. Liq. 3</td>
<td>Flammable liquids. Category 3</td>
</tr>
<tr>
<td>Skin Irrit. 2</td>
<td>Skin corrosion/irritation, Category 2</td>
</tr>
<tr>
<td>Flam. Liq. 3</td>
<td>Flammable liquids, Category 3</td>
</tr>
<tr>
<td>Skin Irrit. 2</td>
<td>Skin corrosion/irritation, Category 2</td>
</tr>
<tr>
<td>Eye Irrit. 2</td>
<td>Serious eye damage/eye irritation, Category 2</td>
</tr>
</tbody>
</table>

SDS EU (REACH Annex II) - Custom

The information contained in this document has been gathered from reference materials and/or Gelest, Inc. test data and is to the best knowledge and belief of Gelest, Inc. accurate and reliable. Such information is offered solely for your consideration, investigation and verification. It is not suggested or guaranteed that the hazard precautions or procedures described are the only ones which exist. Gelest, Inc. makes no warranties, express or implied, with respect to the use of such information and assumes no responsibility therefore. Information on this safety data sheet is not intended to constitute a basis for product specifications.

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