

## SAFETY DATA SHEET

### Classified as hazardous in accordance with the criteria of EPA New Zealand

## **Section 1 - Identification**

**Product Identifier** 

**Product Name** Toluene

**Molecular Formula** C7H8 **Molecular Weight** 92.14

**Recommended Use** Laboratory chemicals. No Information available Uses advised against

**Product Code** AJA1553, AJA3458, AJA551, AJA552, AJA5-A3518, ASC-DTOLUENE, ASC-STOLUE,

BDH102846G, BDH28676, BSPTL640, BSPTL786

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## **Section 2 - Hazard(s) Identification**

Classification under Work Safe New Zealand

Classified as hazardous in accordance with the criteria of EPA New Zealand

**HSNO Approval Number** HSR001227

GHS Classification

Physical hazards

Flammable liquids Category 2

**Health hazards** 

**Aspiration Toxicity** Category 1 **Acute Oral Toxicity** Category 4 Acute Inhalation Toxicity - Vapors Category 4 Skin Corrosion/Irritation Category 2 Serious Eye Damage/Eye Irritation Category 2 Reproductive Toxicity Category 2 Specific target organ toxicity - (single exposure) Category 3 Specific target organ toxicity - (repeated exposure) Category 2

**Environmental hazards** 

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Category 4

### **Label Elements**



### Signal Word

Danger

### **Hazard Statements**

- H225 Highly flammable liquid and vapor
- H304 May be fatal if swallowed and enters airways
- H315 Causes skin irritation
- H336 May cause drowsiness or dizziness
- H361 Suspected of damaging fertility or the unborn child
- H373 May cause damage to organs through prolonged or repeated exposure
- H226 Flammable liquid and vapor
- H319 Causes serious eye irritation
- H413 May cause long lasting harmful effects to aquatic life
- H302 + H332 Harmful if swallowed or if inhaled

### **Precautionary Statements**

### Prevention

- P262 Do not get in eyes, on skin, or on clothing
- P201 Obtain special instructions before use
- P202 Do not handle until all safety precautions have been read and understood
- P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking
- P233 Keep container tightly closed
- P240 Ground and bond container and receiving equipment
- P242 Use non-sparking tools
- P243 Take action to prevent static discharges
- P260 Do not breathe dust/fume/gas/mist/vapors/spray
- P264 Wash face, hands and any exposed skin thoroughly after handling
- P271 Use only outdoors or in a well-ventilated area
- P280 Wear eye protection/ face protection

### Response

- P301 + P330 + P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting
- P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor
- P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or 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
- P308 + P313 IF exposed or concerned: Get medical advice/attention
- P331 Do NOT induce vomiting
- P332 + P313 If skin irritation occurs: Get medical advice/attention
- P363 Wash contaminated clothing before reuse
- P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish

### Storage

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

### Disposal

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

### Other hazards which do not result in classification

Toxic to terrestrial vertebrates

This product does not contain any known or suspected endocrine disruptors

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## **Section 3 - Composition and Information on Ingredients**

Component	CAS No	Weight %
Toluene	108-88-3	>95

### **Section 4 - First Aid Measures**

Description of first aid measures

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**Inhalation** Risk of serious damage to the lungs (by aspiration).

**Eye Contact**Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids.

Consult a physician.

Skin Contact Wash off immediately with soap and plenty of water while removing all contaminated

clothes and shoes.

Ingestion Do NOT induce vomiting. Call a physician or poison control center immediately. If vomiting

occurs naturally, have victim lean forward.

Self-Protection of the First Aider Ensure that medical personnel are aware of the material(s) involved, take precautions to

protect themselves and prevent spread of contamination.

First Aid Facilities Eyewash, safety shower and washroom.

Most important symptoms and

effects

Difficulty in breathing. . Inhalation of high vapor concentrations may cause symptoms like

headache, dizziness, tiredness, nausea and vomiting

**Notes to Physician** Treat symptomatically. Symptoms may be delayed.

## **Section 5 - Fire Fighting Measures**

### **Suitable Extinguishing Media**

Water mist may be used to cool closed containers.

### Extinguishing media which must not be used for safety reasons

No information available.

### **Specific Hazards Arising from the Chemical**

Flammable. Containers may explode when heated. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back.

### **Hazardous Combustion Products**

None under normal use conditions.

### Special protective equipment and precautions for fire fighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

### **Section 6 - Accidental Release Measures**

### Personal Precautions, Protective Equipment and Emergency Procedures

### **Emergency procedures**

Remove all sources of ignition. Take precautionary measures against static discharges.

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### **Environmental Precautions**

See Section 12 for additional Ecological Information. Do not flush into surface water or sanitary sewer system.

### Methods for Containment and Clean Up

Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment.

### Precautions to prevent secondary hazards

Clean contaminated objects and areas thoroughly observing environmental regulations

#### Reference to Other Sections

Refer to protective measures listed in Sections 8 and 13.

## **Section 7 - Handling and Storage**

### **Precautions for Safe Handling**

### Advice on safe handling

Keep away from open flames, hot surfaces and sources of ignition. Use only non-sparking tools. To avoid ignition of vapors by static electricity discharge, all metal parts of the equipment must be grounded. Take precautionary measures against static discharges.

### **Hygiene Measures**

Handle in accordance with good industrial hygiene and safety practice. Keep away from food, drink and animal feeding stuffs. Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Wash hands before breaks and after work.

### Conditions for Safe Storage, Including any Incompatibilities

### **Storage Conditions**

Keep container tightly closed in a dry and well-ventilated place. Keep away from heat, sparks and flame.

### **Incompatible Materials**

None known.

AS/NZS 2243.10:2004, Safety in laboratories - Storage of chemicals AS 1940-2004 - The storage and handling of flammable and combustible liquids

## **Section 8 - Exposure Controls and Personal Protection**

### Control parameters

### **Exposure limits**

**NZ** - Workplace Exposure Standards and Biological Exposure Indices (6th edition). New Zealand Department of Labor **UK** - EH40/2005 Work Exposure Limits, Fourth edition. Published 2020.

AUS - Exposure Standards for Atmospheric Contaminants in the Occupational Environment - Guidance Note on the Interpretation of Exposure Standards for Atmospheric Contaminants in the Occupational Environment [NOHSC:3008(1995)] Adopted National Exposure Standards for Atmospheric Contaminants in the Occupational Environment [NOHSC:1003(1995)] updated in August, 2005. Safe Work Australia

**ACGIH** - Threshold Limit Values - Ceiling (TLV-C) guidelines by the American Conference of Governmental Industrial Hygienists (ACGIH) for controlling worker exposure to airborne chemical concentrations in the workplace.

Component	New Zealand WEL	Australia	ACGIH TLV	The United Kingdom
Toluene	TWA: 20 ppm	STEL: 150 ppm	TWA: 20 ppm	STEL: 100 ppm 15 min
	TWA: 75 mg/m <sup>3</sup>	STEL: 574 mg/m <sup>3</sup>		STEL: 384 mg/m <sup>3</sup> 15 min
	STEL: 100 ppm	TWA: 50 ppm		TWA: 50 ppm 8 hr
	STEL: 377 mg/m <sup>3</sup>	TWA: 191 mg/m <sup>3</sup>		TWA: 191 mg/m <sup>3</sup> 8 hr
	Skin			Skin

### **Biological limit values**

**ACGIH** - American Conference of Governmental Industrial Hygienists (ACGIH) TLVs® and BEIs®- Threshold Limit Values for Chemical Substances and Physical Agents & Biological Exposure Indices. 2022 Edition

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Determinant: Toluene
0.3 mg/g creatinine
Medium: urine
Time: end of shift
Determinant: o-Cresol with
hydrolysis

Component **New Zealand** Australia **ACGIH - Biological United Kingdom Exposure Indices** Toluene 0.03 mg/L (urine) end of 0.02 mg/L exposure or end of shift Medium: blood (Toluene) Time: prior to last shift of 0.3 mg/g creatinine (urine) workweek end of exposure or end of Determinant: Toluene shift (O-Cresol) 0.03 mg/lMedium: urine Time: end of shift

### Appropriate engineering controls

### **Engineering Measures**

Ensure adequate ventilation, especially in confined areas. Use explosion-proof electrical/ventilating/lighting equipment. Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimise release or contact, and the use of properly designed ventilation systems, should be adopted to control hazardous materials at source

### Individual protection measures, such as personal protective equipment

Eye Protection Wear safety glasses with side shields (or goggles) (Australian/New Zealand Standard

AS/NZS 1337 - Eye protectors for Industrial applications)

Hand Protection Protective gloves

Glove material	Breakthrough time	Glove thickness	AUS/NZ Standard	Glove comments
Viton (R).	See manufacturers	-	AS/NZS 2161	(minimum requirement)
	recommendations			

Inspect gloves before use.

Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. (Refer to manufacturer/supplier for information)

Ensure gloves are suitable for the task: Chemical compatability, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion.

Remove gloves with care avoiding skin contamination.

Skin and body protection Long sleeved clothing

**Repiratory Protection** Use an AS/NZS 1716 approved respirator if exposure limits are exceeded or if irritation or

other symptoms are experienced. To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained in line with AS/NZS 1715 on the use

and maintenance of repiratory protective devices

Recommended Filter type: Organic gases and vapours filter Type A Brown conforming to EN14387 (or AUS/NZ

equivalent)

Recommended half mask:- Valve filtering: EN405 or Half mask: EN140 plus filter, EN 141 (or AUS/NZ equivalent)

When RPE is used a face piece Fit Test should be conducted

**Hygiene Measures** Handle in accordance with good industrial hygiene and safety practice.

**Environmental exposure controls** Prevent product from entering drains. Do not allow material to contaminate ground water

system.

## **Section 9 - Physical and Chemical Properties**

Information on basic physical and chemical properties

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Physical State Liquid

Appearance Clear Colorless

Odor
Odor
No information available
No data available
Not applicable
Melting Point/Range
Softening Point
Boiling Point/Range
No data available
111 °C / 231.8 °F

Flammability (liquid) Highly flammable On basis of test data

Flammability (solid,gas) Not applicable Liquid

Explosion Limits No data available

Flash Point 4 °C / 39.2 °F Method - No information available

Autoignition Temperature
Decomposition Temperature
Viscosity
Water Solubility
Solubility in other solvents

No data available
No data available
Very low solubility
No information available

Partition Coefficient (n-octanol/water)

Componentlog PowToluene2.73

Vapor Pressure No data available Density / Specific Gravity No data available

Bulk DensityNot applicableLiquidVapor DensityNo data available(Air = 1.0)

Particle characteristics Not applicable (liquid)

Other information

Molecular Formula C7H8
Molecular Weight 92.14

Explosive Properties Vapors may form explosive mixtures with air

## **Section 10 - Stability and Reactivity**

**Reactivity** None known, based on information available

**Stability** Stable under normal conditions.

Sensitivity to Mechanical Impact No information available

Sensitivity to Static Discharge No information available

**Hazardous Polymerization** No information available.

Hazardous Reactions No information available.

Conditions to Avoid Keep away from open flames, hot surfaces and sources of ignition.

Incompatible Materials None known.

Hazardous Decomposition Products None under normal use conditions.

## **Section 11 - Toxicological Information**

**Acute Effects** 

Information on likely routes of exposure

**Product Information** 

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InhalationNot an expected route of exposure.EyesNot an expected route of exposure.

**Skin** No known effect based on information supplied.

**Ingestion** Harmful if swallowed. Potential for aspiration if swallowed.

### Numerical measures of toxicity

(a) acute toxicity;

OralBased on available data, the classification criteria are not metDermalBased on available data, the classification criteria are not metInhalationBased on available data, the classification criteria are not met

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Toluene	> 5000 mg/kg (Rat)	LD50 = 12000 mg/kg ( Rabbit )	26700 ppm (Rat) 1 h

(b) skin corrosion/irritation; Category 2

(c) serious eye damage/irritation; No data available

(d) respiratory or skin sensitization;

**Respiratory Skin**No data available
No data available

(e) germ cell mutagenicity; No data available

(f) carcinogenicity; No data available

There are no known carcinogenic chemicals in this product

(g) reproductive toxicity; Category 2

(h) STOT-single exposure; Category 3

(i) STOT-repeated exposure; Category 2

**Target Organs** Neuropsychological effects, Ears, Eyes.

(j) aspiration hazard; Category 1

### Symptoms / effects,both acute and delayed

Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting.

## **Section 12 - Ecological Information**

### **Ecotoxicity**

Aquatic ecotoxicity Contains a substance which is:. Harmful to aquatic organisms. The product contains

following substances which are hazardous for the environment. Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. Toxic to aquatic

organisms.

Component	Freshwater Fish	Water Flea	Freshwater Algae	Microtox
Toluene	50-70 mg/L LC50 96 h	EC50: = 11.5 mg/L, 48h	EC50: = 12.5 mg/L, 72h	EC50 = 19.7  mg/L  30

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5-7 mg/L LC50 96 h	(Daphnia magna)	static	min
15-19 mg/L LC50 96 h	EC50: 5.46 - 9.83 mg/L,	(Pseudokirchneriella	
28 mg/L LC50 96 h	48h Static (Daphnia	subcapitata)	
12 mg/L LC50 96 h	magna)	EC50: > 433 mg/L, 96h	
		(Pseudokirchneriella	
		subcapitata)	

**Terrestrial ecotoxicity**There is no data for this product

Persistence and Degradability No information available

**Persistence** Persistence is unlikely.

Component	Degradability
Toluene	86% (20d)
108-88-3 ( >95 )	

Degradation in sewage treatment

plant

Contains substances known to be hazardous to the environment or not degradable in waste

water treatment plants.

Bioaccumulative Potential Bioaccumulation is unlikely

Component	log Pow	Bioconcentration factor (BCF)
Toluene	2.73	90

**Mobility** No information available.

Other adverse effects

Endocrine Disruptor Information Persistent Organic Pollutant Ozone Depletion Potential This product does not contain any known or suspected endocrine disruptors

This product does not contain any known or suspected substance This product does not contain any known or suspected substance

## **Section 13 - Disposal Considerations**

### Waste treatment methods

Waste from Residues/Unused Products

Do not allow into drains or watercourses or dispose of where ground or surface waters may be affected. Wastes, including emptied containers, are controlled wastes and should be disposed of in accordance with all federal, E.P.A., state and local regulations. Assure conformity with all applicable regulations.

**Contaminated Packaging** 

Dispose of this container to hazardous or special waste collection point. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Keep product and empty container away from heat and sources of ignition.

Other Information

Disposal agencies or waste contractors must comply with the New Zealand Hazardous Substances (Disposal) Regulations . Do not flush to sewer. Waste codes should be assigned by the user based on the application for which the product was used. Can be landfilled or incinerated, when in compliance with local regulations.

## **Section 14 - Transport Information**

Component	Hazchem Code
Toluene	3YE
108-88-3 ( >95 )	

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NZS 5433:2020

**UN-No** UN1294 **TOLUENE Proper Shipping Name** 

**Hazard Class Packing Group** Ш

**IATA** 

**UN-No** UN1294 **TOLUENE Proper Shipping Name** 

**Hazard Class Packing Group** Ш

IMDG/IMO

UN1294 **UN-No Proper Shipping Name TOLUENE** 

**Hazard Class** 3 Packing Group Ш

**Environmental hazards** No hazards identified

Transport in bulk according to Annex II of MARPOL 73/78 and the

**IBC Code** 

Not applicable, packaged goods

**Special Precautions** 

No special precautions required. Please refer to the applicable dangerous goods

regulations for additional information.

**Additional information** 

None known

## **Section 15 - Regulatory Information**

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

HSNO Approval Number	HSR001227
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### **National Regulations**

Any applicable tolerable exposure limits and environmental exposure limits according to the EPA Controls for Hazardous Substances are listed below

Component	Tolerable Exposure Limit	Tolerable Exposure Limit	Tolerable Exposure Limit	Environmental Exposure
	(TEL) Air	(TEL) Water	(TEL) Surface	Limits (EEL)
Toluene	400 μg/m <sup>3</sup>	0.8 mg/L		330 µg/L (Water)

### Certified handlers, tracking and controlled substance license requirements

Certified handlers are required for some substances. This includes substances requiring a controlled substance license, and most explosives, vertebrates toxic agents, and certain fumigants. Acutely toxic substances which are a Category 1 or 2, such as pesticides also require Certified handlers. Please check the Health and Safety at Work Act 2015 for further information. Tracking is required for some highly hazardous substances. These substances need to be under the control of an appropriately trained person or appropriately secured. Please check the Health and Safety at Work Act 2015 for further information.

### Prohibition or notification/licensing requirements

Shown below are details of specific prohibition/notifications or licencing requirements when they apply.

**International Regulations** 

**Ozone Depletion Potential** This product does not contain any known or suspected substance

**Persistent Organic Pollutant** This product does not contain any known or suspected substance

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**IECSC** 

**TCSI** 

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Rotterdam Convention (PIC)

Not applicable

### Authorisation/Restrictions according to EU REACH

Component	REACH (1907/2006) - Annex XIV - Substances Subject to Authorization	REACH (1907/2006) - Annex XVII - Restrictions on Certain Dangerous Substances	,
Toluene	-	Use restricted. See entry 48. (see link for restriction details) Use restricted. See entry 75. (see link for restriction details)	

https://echa.europa.eu/substances-restricted-under-reach

### **International Inventories**

New Zealand (NZIoC), Australia (AICS), Europe (EINECS/ELINCS/NLP), Korea (KECL), China (IECSC), Taiwan (TCSI), Japan (ISHL), Canada (DSL/NDSL), Philippines (PICCS). US EPA (TSCA) - Toxic Substances Control Act, (40 CFR Part 710)

NZIoC

Toluene	108-88-3	X	X 203-625-9	-	-	KE-33936	X	X
	·							
Component	CAS No	TSCA	TSCA Inventory notification - Active-Inactive	DSL	NDSL	PICCS	ISHL	ENCS
Toluene	108-88-3	X	ACTIVE	X	-	X	X	Х

Legend: X - Listed '-' - Not Listed

Component

KECL - NIER number or KE number (http://ncis.nier.go.kr/en/main.do)

AICS EINECS ELINCS

### **Section 16 - Other Information**

CAS No

# This safety data sheet complies with the requirements of the EPA Hazardous Substances (Hazard Classification) Notice 2020 and WorkSafe New Zealand Regulations

### Legend

NZIoC - New Zealand Inventory of Chemicals

**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory

**DSL/NDSL** - Canadian Domestic Substances List/Non-Domestic Substances List

**IECSC** - Chinese Inventory of Existing Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

TWA - Time Weighted Average

IARC - International Agency for Research on Cancer

NZS 5433:2020 - Transport of Dangerous Goods on Land

ICAO/IATA - International Civil Aviation Organization/International Air Transport Association

 $\mathbf{MARPOL}$  - International Convention for the Prevention of Pollution from Ships

LD50 - Lethal Dose 50%

**EC50** - Effective Concentration 50%

WEL - Workplace Exposure Limit

**DNEL** - Derived No Effect Level

POW - Partition coefficient Octanol:Water

vPvB - very Persistent, very Bioaccumulative

VOC - (Volatile Organic Compound)

AICS - Australian Inventory of Chemical Substances

**EINECS/ELINCS** - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances

**ENCS** - Japanese Existing and New Chemical Substances

**KECL** - Korean Existing and Evaluated Chemical Substances

NLP

CAS - Chemical Abstracts Service

**ACGIH** - American Conference of Governmental Industrial Hygienists

PNEC - Predicted No Effect Concentration

**OECD** - Organisation for Economic Co-operation and Development **IMO/IMDG** - International Maritime Organization/International Maritime Dangerous Goods Code

**ADG** - Australian Code for the Transport of Dangerous Goods by Road and Rail

LC50 - Lethal Concentration 50%

**ATE** - Acute Toxicity Estimate

RPE - Respiratory Protective Equipment

**NOEC** - No Observed Effect Concentration

**BCF** - Bioconcentration factor

PBT - Persistent, Bioaccumulative, Toxic

### Key literature references and sources for data

HSNO classifications provided in the New Zealand Chemical Classification Information Database (CCID).

https://echa.europa.eu/information-on-chemicals

Suppliers safety data sheet, Chemadvisor - LOLI, Merck index, RTECS

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EPA Guide to classifying hazardous substances in New Zealand EPA - Assigning a product to an existing HSNO approval guide

### **Training Advice**

Chemical hazard awareness training, incorporating labelling, Safety Data Sheets (SDS), Personal Protective Equipment (PPE) and hygiene.

Use of personal protective equipment, covering appropriate selection, compatibility, breakthrough thresholds, care, maintenance, fit and standards.

First aid for chemical exposure, including the use of eye wash and safety showers.

Chemical incident response training.

Fire prevention and fighting, identifying hazards and risks, static electricity, explosive atmospheres posed by vapours and dusts.

Revision Date 12-Mar-2025

Revision Summary Update to GHS format

### **Disclaimer**

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

## **End of Safety Data Sheet**

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