

SAFETY DATA SHEET

According to JIS Z 7253:2019
Revision date 01-Mar-2024
 Revision Number 1.02

Section 1: PRODUCT AND COMPANY IDENTIFICATION

Product Name	Deblocking Solution [Dichloroacetic Acid-Toluene (5:95)]
Product Code	047-34525,045-34521

Supplier FUJIFILM Wako Pure Chemical Corporation
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Recommended uses For research use only

Restrictions on use Seek expert judgment when using for purposes other than those recommended.

Section 2: HAZARDS IDENTIFICATION

GHS classification

Classification of the substance or mixture

Flammable liquids	Category 2
Corrosive to metals	Category 1
Acute toxicity - Inhalation (Vapors)	Category 4
Skin corrosion/irritation	Category 1
Serious eye damage/eye irritation	Category 1
Germ cell mutagenicity	Category 2
Carcinogenicity	Category 2
Reproductive Toxicity	Category 1A (additional)
Specific target organ toxicity (single exposure)	Category 1, Category 3
Category 1 central nervous system	
Category 3 Respiratory irritation, Narcotic effects	
Specific target organ toxicity (repeated exposure)	Category 1
Category 1 central nervous system, kidneys, respiratory system	
Aspiration hazard	Category 1
Acute aquatic toxicity	Category 2
Chronic aquatic toxicity	Category 3

Pictograms



Signal word

Danger

Hazard statements

- H225 - Highly flammable liquid and vapor
- H290 - May be corrosive to metals
- H314 - Causes severe skin burns and eye damage
- H318 - Causes serious eye damage
- H332 - Harmful if inhaled
- H341 - Suspected of causing genetic defects
- H351 - Suspected of causing cancer

- H360 - May damage fertility or the unborn child
 H362 - May cause harm to breast-fed children
 H335 - May cause respiratory irritation
 H336 - May cause drowsiness or dizziness
 H304 - May be fatal if swallowed and enters airways
 H412 - Harmful to aquatic life with long lasting effects
 H401 - Toxic to aquatic life
 H370 - Causes damage to the following organs: central nervous system
 H372 - Causes damage to the following organs through prolonged or repeated exposure: central nervous system, kidneys, respiratory system

Precautionary statements-(Prevention)

- Obtain special instructions before use
- Do not handle until all safety precautions have been read and understood
- Use personal protective equipment as required
- Do not breathe dust/fume/gas/mist/vapors/spray
- Wash face, hands and any exposed skin thoroughly after handling
- Do not eat, drink or smoke when using this product
- Use only outdoors or in a well-ventilated area
- Avoid release to the environment
- Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking
- Keep container tightly closed
- Ground/bond container and receiving equipment
- Use explosion-proof electrical/ ventilating / lighting / equipment
- Use only non-sparking tools
- Take precautionary measures against static discharge
- Keep only in original container
- Keep cool

Precautionary statements-(Response)

- IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
- Immediately call a POISON CENTER or doctor/physician
- Wash contaminated clothing before reuse
- IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
- 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
- IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
- Rinse mouth
- Do NOT induce vomiting
- In case of fire: Use suitable extinguishing media for extinction
- Absorb spillage to prevent material damage

Precautionary statements-(Storage)

- Store in a well-ventilated place. Keep container tightly closed
- Store locked up
- Store in corrosive resistant/ container with a resistant inner liner

Precautionary statements-(Disposal)

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

Others

Other hazards Not available

Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

Single Substance or Mixture Mixture

Chemical Name	Weight-%	Molecular weight	ENCS	ISHL No.	CAS RN
Toluene	91.3	92.14	(3)-2,(3)-60	*	108-88-3
Dichloroacetic acid	8.7	128.94	(2)-1161	2-(4)-657	79-43-6

Note on ISHL No.: * in the table means announced chemical substances.

Section 4: FIRST AID MEASURES

Inhalation

Remove to fresh air. If symptoms persist, call a physician.

Skin contact

Wash off immediately with soap and plenty of water. If symptoms persist, call a physician.

Eye contact

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediate medical attention is required.

Ingestion

Rinse mouth. Never give anything by mouth to an unconscious person. Call a physician or poison control center immediately. Do not induce vomiting without medical advice.

Protection of first-aiders

Use personal protective equipment as required.

Section 5: FIRE FIGHTING MEASURES

Suitable extinguishing media

Carbon dioxide (CO₂), Foam, Extinguishing powder, Sand

Unsuitable extinguishing media

No information available

Specific hazards arising from the chemical product

Thermal decomposition can lead to release of irritating and toxic gases and vapors. Vapors may form explosive mixtures with air

Special extinguishing method

No information available

Special protective actions for fire-fighters

Use personal protective equipment as required. Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear.

Section 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

For indoor, provide adequate ventilation process until the end of working. Deny unnecessary entry other than the people involved by, for example, using a rope. While working, wear appropriate protective equipments to avoid adhering it on skin, or inhaling the gas. Work from windward, and retract the people downwind.

Environmental precautions

To be careful not discharged to the environment without being properly handled waste water contaminated.

Methods and materials for contaminant and methods and materials for cleaning up

Absorb dry sand, earth, sawdust and the waste. Collect empty container that can be sealed.

Recovery, neutralization

No information available

Secondary disaster prevention measures

Clean contaminated objects and areas thoroughly observing environmental regulations.

Section 7: HANDLING AND STORAGE

Handling

Technical measures

Highly flammable. Avoid contact with high temperature objects, spark, and strong oxidizing agents. Avoid contact with metal. Use with local exhaust ventilation.

Precautions

Do not rough handling containers, such as upsetting, falling, giving a shock, and dragging. Prevent leakage, overflow, and

scattering. Not to generate steam and dust in vain. Seal the container after use. After handling, wash hands and face, and then gargle. In places other than those specified, should not be smoking or eating and drinking. Should not be brought contaminated protective equipment and gloves to rest stops. Deny unnecessary entry of non-emergency personnel to the handling area.

Safety handling precautions

Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors). Use personal protective equipment as required. Avoid contact with skin, eyes or clothing.

Storage**Safe storage conditions****Storage conditions**

Keep container protect from light, store in well-ventilated place at room temperature (preferably cool). Keep container tightly closed. Packed with an inert gas.

Safe packaging material

Glass

Incompatible substances

Strong oxidizing agents, Metals

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering controls

In case of indoor workplace, seal the source or use a local exhaust system. Provide the safety shower facility, and hand- and eye-wash facility. And display their position clearly.

Exposure limits

Chemical Name	JSOH (Japan)	ISHL (Japan)	ACGIH
Toluene 108-88-3	TWA: 50 ppm OEL TWA: 188 mg/m ³ OEL Skin ISHL/ACL: 20 ppm	ISHL/ACL: 20 ppm	TWA: 20 ppm
Dichloroacetic acid 79-43-6	N/A	N/A	TWA: 0.5 ppm Skin

Personal protective equipment**Respiratory protection**

gas mask for organic gas (JIS T 8152)

Hand protection

chemical protective gloves (JIS T 8116)

Eye protection

protective eyeglasses or chemical safety goggles (JIS T 8147)

Skin and body protection

Long-sleeved work clothes

General hygiene considerations

Handle in accordance with good industrial hygiene and safety practice.

If this product is classified as "Chemical Substances Hazardous to Skin, etc.", use appropriate protective equipment to them.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Form**Color**

colorless

Turbidity

clear

Appearance

liquid

Odor

no data available

Melting point/freezing point

no data available

Boiling point, initial boiling point and boiling range

no data available

Flammability

Highly flammable liquid and vapor

Evaporation rate:

no data available

Flammability (solid, gas):

no data available

Upper/lower flammability or explosive limits**Upper:**

no data available

Lower:

no data available

Flash point

4.4 °C

Auto-ignition temperature:

no data available

Decomposition temperature:

no data available

pH	no data available
Viscosity (coefficient of viscosity)	no data available
Dynamic viscosity	no data available
Solubilities	No data available
n-Octanol/water partition coefficient:(log Pow)	no data available
Vapour pressure	no data available
Specific Gravity / Relative density	no data available
Vapour density	no data available
Particle characteristics	no data available

Section 10: STABILITY AND REACTIVITY

Stability

Reactivity	no data available
Chemical stability	May be altered by light.

Hazardous reactions

Reacts with acids to generate hydrogen gas.

Conditions to avoid

Extremes of temperature and direct sunlight, Heat, flames and sparks, static electricity, spark

Incompatible materials

Strong oxidizing agents, Metals

Hazardous decomposition products

Halides, Carbon monoxide (CO), Carbon dioxide (CO₂)

Section 11: TOXICOLOGICAL INFORMATION

Acute toxicity

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Toluene	5000 mg/kg (Rat)	12000 mg/kg (Rat)	7460 ppm (Rat) 4 h (vapor)
Dichloroacetic acid	2820 mg/kg (Rat)	510 mg/kg (Rabbit)	N/A

Chemical Name	Acute toxicity -oral- source information	Acute toxicity -dermal- source information	Acute toxicity -inhalation gas-source information
Toluene	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.
Dichloroacetic acid	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.

Chemical Name	Acute toxicity -inhalation vapor- source information	Acute toxicity -inhalation dust-source information	Acute toxicity -inhalation mist-source information
Toluene	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.
Dichloroacetic acid	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.

Skin irritation/corrosion

Chemical Name	Skin corrosion/irritation source information
Toluene	Based on the NITE GHS classification results.
Dichloroacetic acid	Based on the NITE GHS classification results.

Serious eye damage/ irritation

Chemical Name	Serious eye damage/irritation source information
Toluene	Based on the NITE GHS classification results.
Dichloroacetic acid	Based on the NITE GHS classification results.

Respiratory or skin sensitization

Chemical Name	Respiratory or Skin sensitization source information
Toluene	Based on the NITE GHS classification results.
Dichloroacetic acid	Based on the NITE GHS classification results.

Reproductive cell mutagenicity

Chemical Name	germ cell mutagenicity source information
Toluene	Based on the NITE GHS classification results.
Dichloroacetic acid	Based on the NITE GHS classification results.

Carcinogenicity

Chemical Name	Carcinogenicity source information
Toluene	Based on the NITE GHS classification results.
Dichloroacetic acid	Based on the NITE GHS classification results.

Chemical Name	NTP	IARC	ACGIH	JSOH (Japan)
Toluene 108-88-3	-	Group 3		-
Dichloroacetic acid 79-43-6	-	Group 2B	A3	-

Reproductive toxicity

Chemical Name	Reproductive toxicity source information
Toluene	Based on the NITE GHS classification results.
Dichloroacetic acid	Based on the NITE GHS classification results.

STOT-single exposure

Chemical Name	STOT -single exposure- source information
Toluene	Based on the NITE GHS classification results.
Dichloroacetic acid	Based on the NITE GHS classification results.

STOT-repeated exposure

Chemical Name	STOT -repeated exposure- source information
Toluene	Based on the NITE GHS classification results.
Dichloroacetic acid	Based on the NITE GHS classification results.

Aspiration hazard

Chemical Name	Aspiration Hazard source information
Toluene	Based on the NITE GHS classification results.
Dichloroacetic acid	Based on the NITE GHS classification results.

Section 12: ECOLOGICAL INFORMATION

Ecotoxicity

Chemical Name	Algae/aquatic plants	Fish	Crustacea
Toluene	EC50:Pseudokirchneriella subcapitata 433 mg/L 96 h	LC50:Pimephales promelas 15.22 - 19.05 mg/L 96 h	EC50:Ceriodaphnia dubia 3.78 mg/L 48 h
Dichloroacetic acid	N/A	N/A	EC50:Daphnia magna 106mg/L 24 h LC50:Harpacticoida 23000 µg/L 96 h

Other data

Chemical Name	Short-term (acute) hazardous to the aquatic environment source information	Long-term (chronic) hazardous to the aquatic environment source information
Toluene	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.
Dichloroacetic acid	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.

Persistence and degradability	No information available
Bioaccumulative potential	No information available
Mobility in soil	No information available
Hazard to the ozone layer	No information available

Section 13: DISPOSAL CONSIDERATIONS

Waste from residues

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated container and contaminated packaging

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Section 14: TRANSPORT INFORMATION**ADR/RID**

UN number	UN2924
Proper shipping name:	Flammable liquid, corrosive, n.o.s. (Mixture of Dichloroacetic Acid and Toluene)
UN classification	3
Subsidiary hazard class	8
Packing group	II
Marine pollutant	Not applicable

IMDG

UN number	UN2924
Proper shipping name:	Flammable liquid, corrosive, n.o.s. (Mixture of Dichloroacetic Acid and Toluene)
UN classification	3
Subsidiary hazard class	8
Packing group	II
Marine pollutant (Sea)	Not applicable
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	No information available

IATA

UN number	UN2924
Proper shipping name:	Flammable liquid, corrosive, n.o.s. (Mixture of Dichloroacetic Acid and Toluene)
UN classification	3
Subsidiary hazard class	8
Packing group	II
Environmentally Hazardous Substance	Not applicable

Section 15: REGULATORY INFORMATION**Japanese regulations**

Fire Service Act	Category IV, Class I petroleums, dangerous grade 2
Poisonous and Deleterious Substances Control Law	Not applicable
Industrial Safety and Health Act	Harmful Substances Whose Names Are to be Indicated on the Label (Law Art.57) Notifiable Substances (Law Art.57-2) Class 2 Organic Solvents (Enforcement Order Attached Table No.6-2, Ordinance on Prevention of Organic Solvent Poisoning Art.1, Para.1, Item 5) Mutagens - Existing Chemicals Working Environment Evaluation Standards, Administrative Control Levels (Law Art.65-2, Para.1)
Industrial Safety and Health Act (2024~)	【2024.4.1~】 Chemical Substances Hazardous to Skin, etc.(Regulations Article 594-2 Paragraph 1)
Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc	Priority Assessment Chemical Substances (Law Article 2, Para.5)
Regulations for the carriage and storage of dangerous goods in ship	Flammable Liquids (Ordinance Art.3, Ministry of Transportation Ordinance Regarding Transport by Ship and Storage, Attached Table 1)
Civil Aeronautics Law	Flammable Liquids (Ordinance Art.194, MITL Notification for Air Transportation of Explosives etc., Attached Table 1)
Pollutant Release and Transfer	Class 1

**Register Law
(2023.4.1-)**

Class 1 - No.	300
Water Pollution Control Act	Specified substances(Law Art.2 Para.4, Enforcement Order Art.3-3)
Export Trade Control Order	Appendix 2 Export Approval Item
Narcotics and Psychotropics Control Law	
Air Pollution Control Law	Hazardous Air Pollutants, Priority Chemical Substances

Chemical Name	Poisonous and Deleterious Substances Control Law	Industrial Safety and Health Act Substances (Law Art.57-2)	Pollutant Release and Transfer Register Law (2023.4.1-)
Toluene 108-88-3 (91.3)	-	Applicable	Applicable
Dichloroacetic acid 79-43-6 (8.7)	-	Applicable	-

Section 16: OTHER INFORMATION

Key literature references and sources for data etc.

NITE: National Institute of Technology and Evaluation (JAPAN)
<http://www.safe.nite.go.jp/japan/db.html>
 IATA dangerous Goods Regulations
 RTECS:Registry of Toxic Effects of Chemical Substances
 Japan Industrial Safety and Health Association GHS Model SDS
 Dictionary of Synthetic Organic Chemistry , SSOCJ, Koudansha Scientific Co.Ltd.
 Chemical Dictionary, Kyouritsu Publishing Co., Ltd.
 etc

Record of SDS revisions

The following contents were revised. Regulatory information.

Disclaimer

This SDS is according to JIS Z 7253: 2019. 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, 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.

GHS Classification is according to JIS Z 7252:2019. *JIS: Japanese Industrial Standards

End of Safety Data Sheet