

SAFETY DATA SHEET

Fuel Cartridge M5JP
150 905 087
Fuel Cartridge M10JP
150 905 088

1. Product and company identification

Product name : Fuel Cartridge M5JP
150 905 087
Fuel Cartridge M10JP
150 905 088

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

Product use : Fuel cell cartridges
Area of application : Consumer applications.

Supplier/Manufacturer : TOYOTA TSUSHO CORPORATION
Nagoya head office
Century Toyota Bldg., 4-9-8, Meieki
Nakamura-ku
450-8575 Nagoya
Japan

e-mail address of person responsible for this SDS : info@chemical-check.de; k.schnurbusch@chemical-check.de

Emergency telephone number (with hours of operation) : Japan Poison Information Center, Osaka Poison 110 (24H available) 072-727-2499

2. Hazards identification

GHS Classification : H225 FLAMMABLE LIQUIDS - Category 2
H302 ACUTE TOXICITY (oral) - Category 4
H319 EYE IRRITATION - Category 2A
H360 TOXIC TO REPRODUCTION - Category 1B
H370 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) - Category 1
H336 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3
H372 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 1


GHS label elements

Hazard pictograms :




2. Hazards identification


Signal word : Danger


Hazard statements :  H225 - Highly flammable liquid and vapor.
H302 - Harmful if swallowed.
H319 - Causes serious eye irritation.
H336 - May cause drowsiness or dizziness.
H360 - May damage fertility or the unborn child.
H370 - Causes damage to organs. (central nervous system (CNS), eyes, systemic toxicity)
H372 - Causes damage to organs through prolonged or repeated exposure. (central nervous system (CNS), eyes)

Precautionary statements

General : P103 - Read label before use.
P102 - Keep out of reach of children.
P101 - If medical advice is needed, have product container or label at hand.


Prevention :  P201 - Obtain special instructions before use.
P280 - Wear protective gloves, protective clothing and eye or face protection.
P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P241 - Use explosion-proof electrical, ventilating or lighting equipment.
P242 - Use non-sparking tools.
P243 - Take action to prevent static discharges.
P271 - Use only outdoors or in a well-ventilated area.
P260 - Do not breathe vapor.
P270 - Do not eat, drink or smoke when using this product.
P264 - Wash thoroughly after handling.

Response :  P308 + P311 - IF exposed or concerned: Call a POISON CENTER or doctor.
P304 + P312 - IF INHALED: Call a POISON CENTER or doctor 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 or attention.

Storage :  P405 - Store locked up.
P403 + P233 - Store in a well-ventilated place. Keep container tightly closed.
P403 + P235 - Keep cool.

Disposal : P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.

Supplemental label elements :  Eliminate sources of ignition. Avoid spark promoters. Ground/bond container and receiving equipment. These alone may be insufficient to remove static electricity.

Other hazards which do not result in classification :  Static accumulating flammable liquid can become electrostatically charged even in bonded and grounded equipment. Sparks may ignite liquid and vapor may cause flash fire or explosion.

3. Composition/information on ingredients

Substance/mixture : Mixture

Ingredient name	%	CAS number	Official Gazette notice reference number	
			CSCL	ISHL
Methanol	≥90	67-56-1	2-201	Not available.

4. First aid measures

- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If necessary, call a poison center or physician. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Skin contact** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. If necessary, call a poison center or physician. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention. If necessary, call a poison center or physician.
- Ingestion** : Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention. If necessary, call a poison center or physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects

- Inhalation** : Causes damage to organs following a single exposure if inhaled. Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness.
- Skin contact** : Causes damage to organs following a single exposure in contact with skin.
- Eye contact** : Causes serious eye irritation.

4. First aid measures

Ingestion : Harmful if swallowed. Causes damage to organs following a single exposure if swallowed. Can cause central nervous system (CNS) depression.

Over-exposuresigns/symptoms

Inhalation : Adverse symptoms may include the following:
nausea or vomiting
headache
drowsiness/fatigue
dizziness/vertigo
unconsciousness
reduced fetal weight
increase in fetal deaths
skeletal malformations

Skin contact : Adverse symptoms may include the following:
reduced fetal weight
increase in fetal deaths
skeletal malformations

Eye contact : Adverse symptoms may include the following:
pain or irritation
watering
redness

Ingestion : Adverse symptoms may include the following:
reduced fetal weight
increase in fetal deaths
skeletal malformations

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

Notes to physician : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

5. Fire-fighting measures

Suitable extinguishing media : Use dry chemical, CO₂, water spray (fog) or foam.

Unsuitable extinguishing media : Do not use water jet.

5. Fire-fighting measures

Specific hazards arising from the chemical	: Highly flammable liquid and vapor. Runoff to sewer may create fire or explosion hazard. This product is a poor conductor of electricity and can become electrostatically charged. If sufficient charge is accumulated, ignition of flammable mixtures can occur. To reduce potential for static discharge, use proper bonding and grounding procedures. This liquid may accumulate static electricity when filling properly grounded containers. Static accumulation may be significantly increased by the presence of small quantities of water or other contaminants. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. The vapor/gas is heavier than air and will spread along the ground. Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back.
Hazardous thermal decomposition products	: Decomposition products may include the following materials: carbon dioxide carbon monoxide Formaldehyde
Special protective actions for fire-fighters	: Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.
Special protective equipment for fire-fighters	: Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
Remark	: Air/vapor mixtures may be explosive.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel	: No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
For emergency responders	: If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

<u>Environmental precautions</u>	: Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
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Methods and materials for containment and cleaning up

6. Accidental release measures

Small spill

- : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill

- : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

7. Handling and storage

Handling

Protective measures

- : Put on appropriate personal protective equipment (see Section 8). Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container. Handling operations that can promote accumulation of static charges include but are not limited to: mixing, filtering, pumping at high flow rates, splash filling, creating mists or sprays, tank and container filling, tank cleaning, sampling, gauging, switch loading, vacuum truck operations. Restrict flow velocity according to API 2003 (2008), NFPA 77 (2007), and Laurence Britton, "Avoiding Static Ignition Hazards in Chemical Operations". To reduce potential for static discharge, ensure that all equipment is properly grounded and bonded and meets appropriate electrical classification requirements.

Advice on general occupational hygiene

- : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Storage

7. Handling and storage

Conditions for safe storage : Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

8. Exposure controls/personal protection

Appropriate engineering controls : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Occupational exposure limits

Ingredient name	Exposure limits
Methanol	Japan Society for Occupational Health (Japan, 5/2019). Absorbed through skin. OEL-M: 200 ppm 8 hours. OEL-M: 260 mg/m ³ 8 hours. ISHL (Japan, 10/2019). TWA: 200 ppm 8 hours.

Individual protection measures

Respiratory protection : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use. Recommended: Approved/certified respirator with organic vapor cartridge. If operating conditions cause high gas concentrations to be produced or any recommended or statutory exposure limit is exceeded, use an air-fed respirator or self-contained breathing apparatus.

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated. Recommended: Butyl rubber gloves. butyl rubber/neoprene. Viton®

Eye protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.

8. Exposure controls/personal protection

Skin protection

: Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.

Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

9. Physical and chemical properties

Appearance

Physical state

: Liquid.

Color

: Colorless. Clear.

Odor

: Characteristic.

Odor threshold

: Not available.

pH

: Not available.

Melting point/freezing point

: Not available.

Boiling point, initial boiling point, and boiling range

: 64.7°C (148.5°F) [methanol]

Flash point

: Closed cup: 9.7°C (49.5°F) [methanol]

Evaporation rate

: Not available.

Flammability (solid, gas)

: Not applicable.

Lower and upper explosive (flammable) limits

: Lower: 6%
Upper: 44% [methanol]

Vapor pressure

: Not available.

Vapor density

: >1 [Air = 1]

Specific gravity (Relative density)

: Not available.

Solubility

: Easily soluble in the following materials: cold water and hot water.

Partition coefficient: n-octanol/water

: Not available.

Auto-ignition temperature

: Not available.

Decomposition temperature

: Not available.

Viscosity

: Not available.

Other data

Physical/chemical

properties comments

: Not available.

10. Stability and reactivity

- Reactivity** : No specific test data related to reactivity available for this product or its ingredients.
- Chemical stability** : The product is stable.
- Possibility of hazardous reactions** : Under normal conditions of storage and use, hazardous reactions will not occur.
Under normal conditions of storage and use, hazardous polymerization will not occur.
- Conditions to avoid** : Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. Do not allow vapor to accumulate in low or confined areas.
- Incompatible materials** : Reactive or incompatible with the following materials:
oxidizing materials
- Hazardous decomposition products** : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

11. Toxicological information

Acutotoxicity

Product/ingredient name	Result	Species	Dose	Exposure
methanol	LC50 Inhalation Gas.	Rat	145000 ppm	1 hours
	LC50 Inhalation Gas.	Rat	64000 ppm	4 hours
	LD50 Dermal	Rabbit	15800 mg/kg	-
	LD50 Oral	Rat	5600 mg/kg	-

Acutotoxicity estimates

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapors) (mg/l)	Inhalation (dusts and mists) (mg/l)
Fuel Cartridge M5JP/M10JP	555.6	N/A	N/A	N/A	N/A
methanol	500	N/A	64000	N/A	N/A

Conclusion/Summary : Not available.

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
methanol	Eyes - Moderate irritant	Rabbit	-	24 hours 100 mg	-
	Eyes - Moderate irritant	Rabbit	-	40 mg	-

11. Toxicological information

Respiratory sensitization/Skin sensitization

Not available.

Germ Cell Mutagenicity

Conclusion/Summary : Not available.

Carcinogenicity

Conclusion/Summary : Not available.

Reproductive toxicity

Conclusion/Summary : Not available.

Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
methanol	Category 1 Category 3	-	central nervous system (CNS), eyes, systemic toxicity Narcotic effects

Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
methanol	Category 1	-	central nervous system (CNS), eyes

Aspiration hazard

Not available.

Information on the likely routes of exposure : Routes of entry anticipated: Oral, Dermal, Inhalation.

12. Ecological information

Ecotoxicity

Product/ingredient name	Result	Species	Exposure
methanol	Acute EC50 16.912 mg/l Marine water	Algae - Ulva pertusa	96 hours
	Acute LC50 2500000 µg/l Marine water	Crustaceans - Crangon crangon - Adult	48 hours
	Acute LC50 3289 mg/l Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
	Acute LC50 290 mg/l Fresh water	Fish - Danio rerio - Egg	96 hours
	Chronic NOEC 9.96 mg/l Marine water	Algae - Ulva pertusa	96 hours

Conclusion/Summary : Not available.

12. Ecological information

Persistence/degradability

Conclusion/Summary : Not available.

Bioaccumulativepotential

Product/ingredient name	LogP _{ow}	BCF	Potential
methanol	-0.77	<10	low

Mobility in soil

: Not available.

Hazardoustotheozone layer

: Not applicable.

Otheradverseeffects




: No known significant effects or critical hazards.

13. Disposal considerations

Disposal methods

: The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

14. Transport information

	UN	IMDG	IATA
UN number	UN3473	UN3473	UN3473
UN proper shipping name	FUEL CELL CARTRIDGES	FUEL CELL CARTRIDGES	Fuel cell cartridges
Transport hazard class(es)	3 	3 	3 

14. Transport information

Packing group	-	-	-
Environmental hazards	No.	No.	No.

Additional information

- UN : **Special provisions** 328
- IMDG : **Emergency schedules** F-E, S-D
Special provisions 328
- IATA : **Quantity limitation** Passenger and Cargo Aircraft: 5 kg. Packaging instructions: 374.
Cargo Aircraft Only: 50 kg. Packaging instructions: 374. Limited Quantities -
Passenger Aircraft: 2.5 kg. Packaging instructions: Y374. **Special provisions**
A146, A802

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to IMO instruments : Not available.

15. Regulatory information

Fire Service Law

Category	Substance name/Type	Danger category	Signal word	Designated quantity
Category IV	saturated monohydric alcohols	II	Flammable - Keep Fire Away	400 L

ISHL

Substances requiring labelling

Ingredient name	%	Status	Reference number
Methanol	≥90	Listed	560

Chemicals requiring notification

Ingredient name	%	Status	Reference number
Methanol	≥90	Listed	560

ISHL Appendix 1 : Flammable liquid Class 3

Organic solvents : Class 2
poisoning prevention

Chemical Substances Control Law (CSCL)

15. Regulatory information

Ingredient name	%	Status	Reference number
Methanol	≥90	Priority assessment	90

Poisonous and Deleterious Substances

None of the components are listed.

Pollutant Release and Transfer Registers (PRTR)

None of the components are listed.

Road law : Applicable
Japan inventory : Japan inventory (ENCS): All components are listed or exempted.
Japan inventory (ISHL): All components are listed or exempted.

16. Other information

History

Date of issue/Date of revision : ***
Date of previous issue : 2018/07/17
Version : 1.1
Prepared by : Chemical Check GmbH
Key to abbreviations : ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
N/A = Not available
UN = United Nations

Procedure used to derive the classification

Classification	Justification
FLAMMABLE LIQUIDS - Category 2 ACUTE TOXICITY (oral) - Category 4 EYE IRRITATION - Category 2A TOXIC TO REPRODUCTION - Category 1B SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) - Category 1 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 1	On basis of test data Calculation method Calculation method Calculation method Calculation method Calculation method Calculation method

16. Other information

References : JIS Z 7253:2012

✔ Indicates information that has changed from previously issued version.

Noticetoreader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.