SAFETY DATA SHEET

Section 1: Identification		
Product identifier used on the	alabel;	
Product name:	Tamiya Color Spray TS-22 Light Green (#85022) 0401202022	
Product code:		
Other means of identification	•	
No information		
Recommended use of the cher	nical and restrictions	on use;
Recommended use:	Acrylic copolymer coatings (TS)	
Restrictions on use:	No information	
Name, address, and telephone	e number of the chemi	cal manufacturer, importer, or other responsible
party;		
Name:	Tamiya, I	nc.
Department in Charge:	Internatio	nal Division
Address:	 3-7 Ondawara, Suruga-ku, Shizuoka JAPAN 422-8610 +81-(0)54-286-5105 (Headquarters) +81-(0)54-285-3230 (Headquarters) 	
Telephone number:		
Fax number:		
e-mail address: intl_div@tamiya-inc.co.jp		etamiya-inc.co.jp
Emergency phone number		
	+81-(0)54	4-286-5105 (Headquarters)
Section 2: Hazard(s) identification	ation	
Classification of the chemical	in accordance with pa	aragraph (d) of §1910.1200;
Physical Hazards		
Flammable aerosols		Category 1
Health Hazards		
Acute toxicity (dermal):		Category 5
Acute toxicity (inhalation - vapors):		Category 4
Acute toxicity (inhalation – mist):		Category 5
Skin corrosion/ irritation:		Category 2
Eye damage/ irritation:		Category 2A
Reproductive toxicity:		Category 2
Specific target organ toxicity single exposure:		Category 1 (liver, blood, kidneys, central nerves and cen
		nervous system)
		Category 2 (respiratory system)
Specific target organ toxicity repeated or		Category 1 (lungs)
		Category 2 (blood)
prolonged exposure:		

Environmental Hazards

Hazardous to the aquatic environment (acute)	Category 3
Hazardous to the aquatic environment (chronic)	Category 3

Other Hazards

Contact of liquefied gas with skin may cause frostbite.

Signal word, hazard statement(s), symbol(s) and precautionary statement(s) in accordance with paragraph (f) of §1910.1200;

Danger

Symbol(s)



H315: Causes skin irritation

H332: Harmful if inhaled

repeated exposure

H222: Extremely flammable aerosol

H319: Causes serious eye irritation

H333: May be harmful if inhaled

nervous and central nervous system)

prolonged or repeated exposure H402: Harmful to aquatic life

H229: Pressurized container: may burst if heated H313: May be harmful in contact with skin

H361: Suspected of damaging fertility or the unborn child H370: Causes damage to organs (liver, blood, kidneys, central

H371: May cause damage to organs (respiratory system) H372: Causes damage to organs (blood) through prolonged or

H373: May cause damage to organs (blood) through

H412: Harmful to aquatic life with long lasting effects

Signal word Hazard Statement(s)

Precautionary Statement(s) [Prevention] P201: Obtain special instructions before use.
P202: Do not handle until all safety precautions have been read and understood.
P210: Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P211: Do not spray on an open flame or other ignition source.
P233: Keep container tightly closed.
P240: Ground/bond container and receiving equipment.
P241: Use explosion-proof electrical/ventilating/ lighting/equipment.
P242: Use only non-sparking tools.

P243: Take precautionary measures against static discharge.

	P251: Pressurized container: Do not pierce or burn, even after
	use.
	P260: Do not breathe dust/fume/gas/mist/ vapors/spray.
	P261: Avoid breathing dust/fume/ gas/ mist/ vapours/ spray.
	P264: Wash hands thoroughly after handling.
	P270: Do not eat, drink or smoke when using this product.
	P271: Use only outdoors or in a well-ventilated area.
	P272: Contaminated work clothing must not be allowed out of
	the workplace.
	P273: Avoid release to the environment.
	P280: Wear protective gloves/protective clothing/eye
	protection/face protection.
[Emergency response]	P302+P352: If on skin: Wash with plenty of water.
	P303+P361+P353: If on skin (or hair): Take off immediately
	all contaminated clothing. Rinse skin with water/shower.
	P304+P312: If inhaled: Call a poison center /doctor /if you
	feel unwell.
	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+P311: If exposed or concerned: Call a poison
	center/doctor.
	P308+P313: If exposed or concerned: Get medical
	advice/attention.
	P312: Call a poison center/doctor/if you feel unwell.
	P314: Get medical advice/attention if you feel unwell.
	P321: Specific treatment
	P332+P313: If skin irritation occurs: Get medical advice/
	attention.
	P333+P313: If skin irritation or rash occurs: Get medical
	advice/attention.
	P337+P313: If eye irritation persists: Get medical
	advice/attention.
	P362+P364: Take off contaminated clothing and wash it
	before reuse.
	P363: Wash contaminated clothing before reuse.
	P370+P378: In case of fire: Use suitable extinguishing media
[Storage]	to extinguish.
[Storage]	P403+P235: Store in a well-ventilated place. Keep cool.
	P405: Store locked up.
	P410+P412: Protect from sunlight. Do not expose to
	temperatures exceeding 40°C/104 °F.
[Disposal]	P501: Dispose of contents/container in accordance with
	local/regional/national/international regulations.

Description of any hazards not otherwise classified;

No information

Ingredient with unknown acute toxicity in the mixture

5 - 10 % of the mixture consists of ingredients of unknown acute toxicity.

Compositions (contents of the prod	uct)		
Chemical name	CAS No.	Concentration/ concentration ranges (wt %)	Chemical Formula
Acrylic copolymer		5 - 10	—
Nitro cellulose	9004-70-0	1-5	—
iso-Butyl acetate	110-19-0	5 - 15	$C_{6}H_{12}O_{2}$
Butyl acetate	123-86-4	5 - 10	$C_{6}H_{12}O_{2}$
Ethylene glycol mono-n-butyl ether	111-76-2	1-5	$C_{6}H_{14}O_{2}$
3-Methoxy butyl acetate	4435-53-4	<1	$C_{7}H_{14}O_{3}$
iso-butyl alcohol	78-83-1	5 - 15	$C_4H_{10}O$
2-Butanol (sec-Butanol)	78-92-2	5 - 10	$C_4 H_{10} O$
Propylene glycol mono-methyl ether acetate	108-65-6	1-5	$C_{6}H_{12}O_{3}$
Copper combination(Green7)	1328-58-6	<1	
Titanium Oxide(IV)	13463-67-7	1 - 5	TiO ₂
Other ingredients	—	1 - 5	
Dimethyl ether (as propellant)	115-10-6	40 - 50	C_2H_6O

Section 3: Composition/information on ingredients

So N

Section 4: First-aid measures		
Necessary first-aid measures by relevant routes of exposure;		
IF INHALED	If inhaled a large volume of vapor or gases, immediately	
	remove victim to fresh air and keep patient at rest and warm.	
	If not breathing or breathing is weakened, give artificial	
	respiration.	
	If you feel unwell after inhaling vapor or gases, keep at rest	
	under fresh air and get medical advice/attention.	
IF ON SKIN	Wipe off with a dry cloth then wash the contaminated area	
	with soap and water.	
	Take off immediately all contaminated clothing.	
	Wash contaminated area with plenty of soap and water.	
	If exposed to the solvent to the whole body, wash thoroughly	
	by taking a bath or shower.	
	When suffering from frostbite due to contact with the	
	liquefied gas, rinse skin with plenty of regular/warm water	
	without taking off clothes.	
	If appearance changes or pain occur, get medical	
	advice/attention.	

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IF IN EYES	Rinse cautiously with water for several minutes.
	Remove contact lenses, if present and easy to do. Continue
	rinsing.
	If pain continues, immediately get medical advice/attention.
IF SWALLOWED	As this product is volatile, vomiting may increase risk.
	Immediately get medical advice/attention.
	Wash mouth out thoroughly with water.

If unconscious, do not give anything by mouth.

Most important symptoms/effects, acute and delayed;

May cause an allergic skin reaction. Causes serious eye irritation. Harmful if inhaled. Suspected of causing cancer. Suspected of damaging fertility or the unborn child. Causes damage to organs. Causes damage to organs through prolonged or repeated exposure. May cause damage to organs through prolonged or repeated exposure.

Indication of immediate medical attention and special treatment needed, if necessary;

No information

Section 5: Fire-fighting measures

Suitable (and unsuitable) extinguishing media;

Suitable extinguishing media:

Keep away from aerosol products that might explode when exposed to high temperatures.

Do not use water.

In case of a small-scale fire: dry chemical powder, carbon dioxide or alcohol resistance foam. In case of a large-scale fire: carbon dioxide, fire foam, dry chemical powder or dry sand.

Unsuitable extinguishing media

Direct water

Specific hazards arising from the chemical;

Aerosol containers may explode in fire. Content is highly flammable combustible liquid.

Special protective equipment and precautions for fire-fighters;

Immediately extinguish a fire with fire extinguisher.

Use the specified fire extinguisher.

Immediately remove nearby flammable materials.

Take action from windward. Avoid breathing toxic gases (e.g. CO, NO_X).

Ensure to wear suitable protective equipment (e.g. heat resistant protective clothing, protective glasses and self-contained compressed air breathing apparatus) in firefighting.

Section 6: Accidental release measures

Personal precautions, protective equipment, and emergency procedures;

Appropriate protective equipment must be worn when handling spill of this material.

May cause organic solvent poisoning.

Hazardous to human health. This product has risk of acute or chronic effects.

Before taking any measures in the event of gas leakage (blowout), approach the spot from the windward side to empty out the gas container, with the leaking area facing upward.

Quickly remove ignition sources, high temperature materials or combustible materials from the surrounding. Evacuate people downwind from the fire. Keep out except responsible personnel.

Set up dry chemical powder or fire foam in preparation for ignition.

Pick up the gas container using tools made from materials that avoid impact/static-induced sparks (anti-spark).

Ventilate confined spaces before entering.

Wear suitable protective equipment (e.g. gloves, protective mask, apron and goggle).

Avoid release into the environment because spilled product may cause local effects.

In case of a small amount of spill, collect spilled product by absorbing in dry sand or sawdust and followed by placing it in a waste container.

If case of large amounts, prevent leakage and enclose by embankment.

Collect leakage into a closed container and then move to safe place.

Do not allow leakage to enter drains or sewers.

Dispose of contaminants or wastes in accordance with applicable laws and regulations.

Methods and materials for containment and cleaning up;

Immediately remove ignition sources nearby, and set up dry chemical powder or fire foam in preparation for ignition.

Do not walk over leaked materials more than necessary.

Use non-sparking tools.

Section 7: Handling and storage

Precautions for safe handling

Protective measures:

Install appropriate equipment and wear suitable protective apparatus described in "Section 8: Exposure controls/personal protection".

For protection against static electricity, grounding all equipment and use explosion proof (increased safety type) electric apparatus. Take necessary measures against static electricity. Wear electro conductive work clothes and shoes.

Use anti-spark tools.

Handle the product in a well-ventilated area and accordingly store in a closed container.

If used in a closed place, install sufficient local ventilation equipment and wear suitable protective equipments during work.

Do not handle until all safety precautions have been read and understood.

Wear protective equipment to prevent from exposure.

Do not use fire, spark or high temperature materials around the product.

Do not spray on an open flame.

Containers may burst when exposed to high temperatures.

When transporting, avoid making impacts on container or handling violently. Load so that falling, dropping off or damage will not occur.

Wear suitable protective equipment to avoid contact with skin, mucosa, clothing, or eyes.

Do not contact, inhale or swallow this product.

Use only outdoors or in a well-ventilated area.

Advice on general occupational hygiene:

Wash hands thoroughly after handling.

Conditions for safe storage, including any incompatibilities

Technical measures:

In the storage area, install adequate light and ventilation systems to handle hazardous materials. Take precautionary measures against static discharge.

Incompatible materials:

Strong oxidizers and strong alkali

Conditions for safe storage:

Keep out of reach of children.

Keep away from direct sunlight and store in a well ventilated place.

Because gas may leak or blow out from a rusted container, avoid storing this product in high-humidity environments near water sources.

Keep away from sources of ignition or heat.

Do not put this product at place over 40°C.

Electrical equipment used in the storage area must be explosion- proof and grounded.

Packing material:

Use the packaging container in accordance with regulations.

Section 8: Exposure	controls/persona	l protection
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OSHA PEL ACGIH TLV-TWA (2014)	 150 ppm, 710 mg/m³ (<i>n</i>-Butyl acetate) 150 ppm, 700 mg/m³ (Isobutyl acetate) 50 ppm, 240 mg/m³ (2-Butoxyethanol (EGBE)) 100 ppm, 541 mg/m³ (Propylene glycol mono-methyl ether acetate) 100 ppm, 300 mg/m³ (Isobutanol (Isobutyl alcohol) 100 ppm, 305 mg/m³ (2-Butanol (sec-Butyl alcohol) 150 ppm, 713 mg/m³ (<i>n</i>-Butyl acetate) 150 ppm, 713 mg/m³ (Isobutyl acetate) 20 ppm, 97 mg/m³ (2-Butoxyethanol (EGBE)) 	
	50 ppm, 152 mg/m ³ (Isobutanol (Isobutyl alcohol)) 100 ppm (2-Butanol (sec-Butyl alcohol))	
	500 ppm, 1,188 mg/m ³ (Acetone) 10 mg/m ³ (Titanium dioxide)	
ACGIH TLV-STEL (2014)	10 mg/m ³ (Copper combination) 200 ppm, 950 mg/m ³ (<i>n</i> -Butyl acetate) 750 ppm, 1,782 mg/m ³ (Acetone)	

Appropriate engineering controls;

Use explosion proof equipment.

Take precautionary measures against static discharge.

Install eye washer and safety shower around the handling place.

With the help of a ventilator, prevent the gas steam from staying afloat.

In handling this product, make sure that there are no high-temperature devices or potential ignition sources nearby.

If used indoor, install equipment to prevent workers from direct exposure, or provide local exhaust ventilation system to prevent workers exposed to vapors.

Individual protection measures, such as personal protective equipment;

Respiratory protection	Wear gas mask for organic gases, dust mask and/or
	air-supplied respirator (in confined spaces) if necessary.
Hand protection	Wear solvent resistance protective gloves if necessary.
Eye protection	Wear protective glasses (goggle or with a side plate) or face
	protector if necessary.
Skin and body protection	Wear protective clothing, boots or solvent resistance apron if
	necessary.

Hygiene measure

Do not eat, drink or smoke during work. Wash hands thoroughly after handling.

	Product Liquid	Propellant (DME)
Appearance	Green liquid	Under atmospheric pressure: Clea
(physical state, color, etc.)		and colourless liquefied gas
(r),		In pressure container: Clear and
		colourless liquid
Odor	Solvent or sharp odor	Slight sweet odor
Odor threshold	No information	No information
pH	Not applicable	Not applicable
Melting point/freezing	-	-141.5°C
point Initial boiling point and	100 - 171°C	-24.82°C
boiling range		
Flash point	20°C	-41.1°C
Evaporation rate	No information	No information
Flammability (solid, gas)	No information	No information
Upper/lower flammability	No information	No information
or explosive limits		
Vapor pressure	3.6 KPa (20°C)	0.41 MPa (20°C)
Vapor density	No information	1.59 (Air = 1)
Relative density	No information	No information
Solubility (ies)	-	Water: 7.0 g/100 cc
		(18°C 760 mmHg)
Partition coefficient:	No information	No information
<i>n</i> -octanol/water		
Auto-ignition temperature	No information	No information
Decomposition temperature	No information	No information
Viscosity	No information	No information
Ignition point	<u>≥</u> 180°C	350°C
Range of explosion	1.1 - 15.0 vol%	3.4 - 24 vol%
Specific gravity	ca. 0.9	0.661 (20°C)

Other information

No information

Section 10: Stability and reactivity

Reactivity

This product may explode at 40°C or above. Static electrical charge may induce explosion.

Chemical stability

This product is a flammable liquefied gas, which tends to form an explosive gas mixture with air.

Possibility of hazardous reactions

This product contains high-pressure gas. This product may explode due to heating and shock. The use of this product in cars may cause smothering or lack of oxygen. Thoroughly ventilate car after use. Before ventilating, make sure of the absence of ignition sources nearby. Keep in mind that the gas tends to stay afloat at lower positions.

Conditions to avoid

Storage under high temperature and humidity conditions and use near fire (ignition source such as flame or sparks).

Incompatible materials

Strong oxidizers and strong alkali

Hazardous decomposition products

May produce toxic gases (e.g. CO, NO_X) by inflammation.

Section 11: Toxicological information

Symptoms related to the physical, chemical and toxicological characteristics;

Information on product:

Acute toxicity (dermal):	This product is classified Category 5 by GHS classification.
Acute toxicity (inhalation - vapors):	This product is classified Category 4 by GHS classification.
Acute toxicity (inhalation - mist):	This product is classified Category 5 by GHS classification.
Skin corrosion/ irritation:	This product is classified Category 2 by GHS classification.
Eye damage/ irritation:	This product is classified Category 2 A by GHS classification.
Reproductive toxicity:	This product is classified Category 2 by GHS classification.
Specific target organ toxicity single	This product is classified Category 1 (liver, blood, kidneys,
exposure:	central nervous and central nervous system) and Category 2
1	(respiratory system) by GHS classification.
Specific target organ toxicity repeated	This product is classified Category 1 (lungs) and Category 2
exposure:	(blood) by GHS classification.
Other toxicological information	Contact of liquefied gas with skin may cause inflammation or
C	frostbite.

Information on ingredients: Nitro cellulose	
Acute toxicity (oral):	Rat $LD_{50} = 5,000 \text{ mg/kg}$
Other toxicological information	No information
Butyl acetate	
Acute toxicity (oral):	Rat $LD_{50} = 14,870 \text{ mg/kg}$
Other toxicological information	No information
iso-Butyl acetate	
Acute toxicity (oral):	Rat $LD_{50} = 15,400 \text{ mg/kg}$
Other toxicological information	No information
Ethylene glycol mono- <i>n</i> -butyl ether	
Acute toxicity (oral):	Rat $LD_{50} = 500 \text{ mg/kg}$
Carcinogenicity:	Ethylene glycol mono- <i>n</i> -butyl ether is classified Group 3 by
	IARC.
Other toxicological information	No information
Propylene glycol mono-methylether ace	ate
Acute toxicity (oral):	Rat $LD_{50} = 8,532 \text{ mg/kg}$
Other toxicological information	No information
3-Methoxy butyl acetate	
Acute toxicity (oral):	Rat $LD_{50} = 4,210 \text{ mg/kg}$
Other toxicological information	No information
iso-Butyl alcohol	
Acute toxicity (oral):	Rat $LD_{50} = 2,460 \text{ mg/kg}$
Other toxicological information	No information
2-Butanol (sec-Butanol)	
Acute toxicity (oral):	Rat $LD_{50} = 6,480 \text{ mg/kg}$
Other toxicological information	No information
Titanium Oxide (IV)	
Carcinogenicity:	Titanium Oxide (IV) is classified Group 2B by IARC.
Other toxicological information	No information
Carbon black	
Carcinogenicity:	Carbon black is classified Group 2B by IARC.
Other toxicological information	No information
C	

Copper combination(Green7)

Acute toxicity (oral):	Rat LD ₅₀ \geq 5,000mg/kg
Other toxicological information	No information

Delayed and immediate effects and also chronic effects from short- and long-term exposure;

May cause an allergic skin reaction.
Causes serious eye irritation.
Harmful if inhaled.
Suspected of causing cancer.
Suspected of damaging fertility or the unborn child.
Causes damage to organs (liver, blood, respiratory system, kidneys, central nerves and central nervous system).
Causes damage to organs (kidneys, systemic toxicity and lungs) through prolonged or repeated exposure.

May cause damage to organs (blood) through prolonged or repeated exposure.

Numerical measures of toxicity (such as acute toxicity estimates);

Acute toxicity was estimated based on ingredients of the product by additivity formula.

Section 12: Ecological information	
Ecotoxicity:	
Information on product:	No information
Information on ingradiants	
Information on ingredients: Nitro cellulose	
Nillo cellulose	
Aquatic acute toxicity:	No information
Aquatic chronic toxicity:	No information
Butyl acetate	
Aquatic acute toxicity:	A toxicity rank for aquatic life is 100 – 10 ppm.
Aquatic chronic toxicity:	No information
iso-Butyl acetate	
Aquatic acute toxicity:	A toxicity rank for aquatic life is 1,000 ppm.
Aquatic chronic toxicity:	No information
Ethylene glycol mono-n-butyl ether	
Aquatic acute toxicity:	Fish (<i>Carassius auratus auratus</i>) 24h-LC ₅₀ = 1,700 mg/L
Aquatic chronic toxicity:	No information
3-Methoxy butyl acetate	
Aquatic acute toxicity:	Fish (Danio rerio) 96h-TLm = 7.1 ppm
Aquatic chronic toxicity:	No information

iso-Butyl alcohol	Date of issue. 1st April, 2
Aquatic acute toxicity: Aquatic chronic toxicity:	Fish (<i>Carassius auratus auratus</i>) 24h-TLm = 2,600 mg/L No information
2-Butanol (sec-Butanol)	
Aquatic acute toxicity: Aquatic chronic toxicity:	Fish (Carassius auratus auratus) 24h-TLm = 4,300 mg/L No information
Copper combination (Green7)	
Aquatic acute toxicity: Aquatic chronic toxicity:	No information No information
Titanium Oxide (IV)	
Aquatic acute toxicity: Aquatic chronic toxicity:	No information No information
Dimethyl ether (a Dimethyl ether (as pro	opellant)
Aquatic acute toxicity: Aquatic chronic toxicity:	No information No information
Persistence and degradability:	
Information on product:	No information
Information on ingredients:	
Nitro cellulose	
No information	
Butyl acetate	
Readily degradable.	
iso-Butyl acetate	
Readily degradable.	
Ethylene glycol mono- <i>n</i> -butyl ether Readily degradable.	
Propylene glycol mono-methyl ether acc No information	etate
3-Methoxy butyl acetate No information	
<i>iso</i> -Butyl alcohol Readily degradable.	

2-Butanol (<i>sec</i> -Butanol) Readily degradable.		
Copper combination(Green7)		
No information		
Titanium Oxide (IV)		
No information		
Dimethyl ether (as propellant) No information		
Bioaccumulative potential:		
Information on product:	No information	
Mobility in soil: Information on product:	No information	
Other adverse effects:		

No information available at this time. However, be careful because the leakage or disposal of the product may cause affects to the environment.

Section 13: Disposal considerations

Waste treatment methods

Dispose of material waste in accordance with governmental regulations.

Prevent release of material into natural.

Incinerate in a where permitted by appropriate federal, state and local regulations.

Comply with all federal, state and local regulations.

Do not dump this product into sewers, on the ground or into any body of water.

Section 14: Transport information	on
UN number	1950
UN proper shipping name	AEROSOLS
Transport hazard class(es)	2
Packing group	-
Environmental hazards	Applicable
Transport in bulk according to Annex II of MARPOL 73/78 and IBC code	

Not applicable

Special precautions for user

On transportation, keep containers under 40°C.

Perform loading making sure that overrun, fall down, or any damage does not occur.

Section 15: Regulatory information	
OSHA:	Hazardous chemical
TSCA inventory :	These substances are on the inventory or exempt from listing.
TSCA SNUR	Not listed

Section 16: Other information, including date of preparation or last revision

Update history:

Date of issue: 1st April, 2015

References:

Information of Tamiya, Inc. ACGIH, American Conference of Governmental Industrial Hygienists (2014) TLVs and BEIs.

[Disclaimer]

This SDS has been prepared based on the best available information however, it may not be sufficient in some cases. It is user's responsibility to modify or update any contents in this SDS regarding information on hazardous properties and/or instruction for safe handling of the product when they become available. Precautionary measures in this SDS are only applicable for normal handling conditions and it is necessary to take appropriate additional measures to ensure safe handling which depend on your specific use conditions or situations.