Reversion Date : Nov. 9, 2017

Safety Data Sheet

1. IDENTIFICATION

Trade Name (Product Identifier): **TASETO COLOR CHECK FD-S (Developer)**

Supplier's Name: TASETO Co., Ltd. Chemical Department
Address : 100-1, Miyamae, Fujisawa, Kanagawa prefecture, JAPAN
Telephone No.: 0081-466-29-5638 (Emergency phone number)
Recommended Use: Penetrant inspection developer
Package: Aerosol

2. HAZARDS IDENTIFICATION

GHS classification

Physical Hazards:	Aerosols	: Category1
	*Except the above physical hazards, classification results is not applicable or classification not possible.	
Health Hazards:	Acute toxicity (Oral)	: Classification not possible
	Acute toxicity (Dermal)	: Classification not possible
	Acute toxicity (inhalation: Gas)	: Classification not possible
	Acute toxicity (inhalation: Vapor)	: Category5
	Acute toxicity (inhalation: Dust and mist)	: Classification not possible
	Skin corrosion / irritation	: Category 2
	Eye damage / eye irritation	: Category 2A
	Respiratory sensitization	: Classification not possible
	Skin sensitization	: Classification not possible
	Germ cell mutagenicity	: Classification not possible
	Carcinogenicity	: Classification not possible
	Reproductive toxicity	: Category1A
	Reproductive toxicity / effects on or via lactation	: Classification not possible
	Specific target organ toxicity-Single exposure	: Category3 (Respiratory tract irritation, Narcotic effects)
	Specific target organ toxicity-Repeated exposure	: Category1 (Liver) Category2 (Central nervous system)
	Aspiration toxicity	: Not classified
Environmental Hazards:	Acute hazardous to the aquatic environment	: Category1
	Long hazardous to the aquatic environment	: Category1
	Hazard to the ozone layer	: Classification not possible

GHS label elements

Hazard pictograms:	
Signal word:	Danger
Hazard statements:	Extremely flammable aerosol Pressurized container: may burst if heated May be harmful if inhaled (Vapor) Causes skin irritation Causes serious eye irritation May damage fertility or the unborn child

	May cause respiratory irritation May cause drowsiness or dizziness Causes damage to organs (liver) through prolonged or repeated exposure. May causes damage to organs (central nervous system) through prolonged or repeated exposure. Very toxic to aquatic life Very toxic to aquatic life with long lasting effects
Precautionary statements:	[Prevention] Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Do not spray on an open flame or other ignition source. Do not pierce or burn, even after use. Do not breathe dust / gas / mist / vapours / spray. Wash hands 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 if this is not the intended use. Wear protective gloves / protective clothing / eye protection / face protection. [Response] IF SWALLOWED: Immediately call a POISON CENTER / doctor. Do NOT induce vomiting. IF ON SKIN: Wash with plenty of water and soap. If skin irritation occurs: Get medical advice / attention. Take off contaminated clothing and wash it before reuse. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Get medical advice / attention if you feel unwell. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice / attention. IF exposed or concerned: Get medical advice / attention. Collect spillage. [Storage] Keep out of reach of children. Store in a well-ventilated place. Keep container tightly closed. Protect from sunlight. Do not expose to temperatures exceeding 50 ℃ / 122 ℉. [Disposal] Dispose of contents / container in accordance with local / regional / international regulations.

3. COMPOSITION / INFORMATION on INGREDIENTS

Ingredient	wt%	CAS No.	LD_{50}	TLV
Ethanol	30 ~ 40	64-17-5	6.2 ~ 15.0 g/kg (rat, oral)	1,000 ppm (TLV-STEL)
n-Heptane	5 ~ 15	142-82-5	5,000 mg/kg (rat, oral) 3,000 mg/kg (rabbit, dermal)	400 ppm (TLV-TWA) 500 ppm (TLV-STEL)
Amorphous silica	2 ~ 7	112926-00-8	> 5,000 mg/kg (rat, oral) > 5,000 mg/kg (rat, dermal)	3 mg/m^3 (Respirable particles) 10 mg/m^3 (Inhalable particles)
White Inorganic Powder	1 ~ 5	—	Not avail.	Not avail.
Non-ionic Surfactant	< 3	—	Not avail.	Not avail.
Propellant LPG: Propane	15 ~ 20	74-98-6	—	Asphyxia
Butane	22 ~ 27	75-28-5 106-97-8	—	1,000 ppm (TLV-STEL)

4. FIRST-AID MEASURES

IF INHALED:	Remove person to fresh air and keep comfortable for breathing. Get medical advice / attention if you feel unwell.	
IF ON SKIN:	Take off immediately all contaminated clothing. By calm running water of the right temperature, wash it more than 15 minutes. If skin irritation occurs: Get medical advice / attention. Wash contaminated clothing before reuse.	
IF IN EYES:	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Start washing promptly. It is necessary to wash completely away the product which was in eyes. When washing is insufficient, the damage of irreversible eyes might occur. If eye irritation persists: Get medical advice / attention.	
IF SWALLOWED:	Rinse out a mouth immediately, and do not let me vomit. Get medical advice / attention immediately.	
The most important acute and tardive symptoms:	IF INHALED:	Cough, Dizziness, Headache, Sleepiness, Intoxication state, Loss of consciousness, Breathing stop, Anesthesia action
	IF ON SKIN:	Stimulation, Foam, Drying, Burning sensation
	IF IN EYES:	Stimulation, Flare, Pain
	IF SWALLOWED:	Stomach cramps, Nausea, Vomiting Please refer to "IF INHALED" for other symptoms.
Protection of the person taking a step temporarily:	The rescuers wear a tool for appropriate protection depending on the situation. Be careful about fire.	
Special instructions for doctor:	Let you keep rest, and medical follow-up is necessary.	

5. FIRE-FIGHTING MEASURES

Extinguishing media:	Small fire:	Carbon dioxide, Powdery extinguishant, Sprinkling, Fire foam
	Inferno:	Sprinkling, Mist water, Fire foam
Inappropriate Extinguishing media:	Stick drainage	
Special danger hazardousness about the measures at the time of the fire:	It is easy to extremely burn. It catches fire easily by heat, a spark, a flame. By heating, a container might explode. By a fire, it might produce irritating, toxic or corrosive gas. In indoor, outdoor or a sewer, there is the risk of the steam explosion.	
Special fire extinguishing method:	When a fire might spread by sprinkling, among extinguishant to show as above, use the appropriate extinguishant except the sprinkling. Flash point is extremely low. Choose sprinkling in the case if an ineffective big fire even if you use the extinguishant except the sprinkling. Move a container from the fire area if not dangerous. After having extinguished a fire, cool a container using plenty of water enough.	
Protection of the person extinguishing a fire of:	On the occasion of fire extinguishing work, wear appropriate air respiratory organs, protection clothes for the chemistry.	

6. ACCIDENT RELEASE MEASURES

Notes on human body / Protective equipment and emergency measures:	Immediately isolate the appropriate distance in all directions as leakage area. Prohibition of entry and exit of unrelated persons and unprotected persons in leakage areas. Do not touch spills or walk in it. Workers should wear appropriate protective equipment (refer to "8. EXPOSURE CONTROLS／PERSONAL PROTECTION") to avoid contact with the eyes, skin and inhalation. Do not touch broken containers or spills when not wearing proper protective equipment.

	Stay on the windward. Leave the lowland. Ventilate the sealed area.
Notes on the environment:	Be cautious so that it will be discharged to rivers and others and not affect the environment. Do not release into the environment
Containment and purification methods / equipment:	In case of small amount, collect with dry embankment, sand or incombustible material, cover it up in an empty container that can be closed. In case of small amount, when collecting absorbed, use a clean antistatic tool. In case of large quantity, enclose it in embankment to prevent outflow, guide to safe place to collect. In large quantities, sprinkling reduces the vapor concentration. However, there is a risk that combustion cannot be suppressed in a sealed place. Stop the leak if there is no danger. All equipment used when handling spills should be grounded. Steam suppression foam should be used to lower vapor concentration.
Measures to prevent secondary disasters:	Quickly remove all ignition sources (smoking in the vicinity, prohibition of fireworks and flames). Prevent drainage into ditches, sewer grooves, basements or closed places.

7. HANDLING AND STORAGE

Handling:	Technical measures:	Perform facilities measures listed in "8. EXPOSURE CONTROLS／PERSONAL PROTECTION", and wear a tool for protection. When you deal with quantity more than designated amount, perform it in a factory, a bank, a handling place satisfying a standard established by law. Avoid contacting with heat, fireworks, flame or a high temperature. Do not let me emit steam abusively. No smoking.
	Local exhaust / whole ventilation:	Refer to "8. EXPOSURE CONTROLS／PERSONAL PROTECTION".
	Safe handle instructions:	Do not handle until all safety precautions have been read and understood. Prohibit the high temperature thing, spark and using of the fire at outskirts. Do not let a container turn over and drop and give a container shock, and trail a container. Do not swallow, contact and inhale. You must not put it in eyes. Do not inhale gas, mist, steam, spray. Use only outdoors or in a well-ventilated area.
	Contact evading:	Refer to "10. STABILITY AND REACTIVITY".
	Hygiene measures:	Do not eat, drink or smoke when using this product. After handling, wash hands and a face well, and gargle. Take off the wet clothing, and reuse it after completely washing it. Check the tool of protection by a check list regularly.
Storage:	Technical measures:	The storage area loses a wall, a pillar, a floor with fire-resistant structure. And make a beam with flaming retardant materials. The storage area is made a roof with flaming retardant materials. Make in metal plate or other lightweight flaming retardant materials, and do not establish the ceiling. Assume it structure that water invades in the floor of the storage area and does not penetrate. Assume the floor of the storage area the structure that dangerous materials do not spread among. And give it an appropriate slope, and arrange the appropriate pool. Establish the facilities of necessary lighting, illumination and the ventilation in the storage area to store dangerous materials, and to handle it.
	Safety storage condition:	Keep it from the firing source such as heat, fireworks, naked light apart. –No smoking.

Keep it from an oxidizer apart.
Avoid direct rays of sun and fire at container.
Seal up container, and keep it at a good place of the ventilation.
Do not pressure a container. You might be damaged when you pressure a container.

Safe wrapping: Use a container prescribed by the Fire Services Act and the United Nations transportation law.
Stainless steel and aluminum are durable as a container.
Avoid the use with the container to invade various kinds of plastic.

8. EXPOSURE CONTROLS／PERSONAL PROTECTION

Allowable density	ACGIH (2015)	TLV-STEL	1,000 ppm	Ethanol
(Revelation limit value)		TLV-TWA	400 ppm	n-Heptane
		TLV-STEL	500 ppm	n-Heptane
		TLV	3 mg/m^3 (Respirable particles)	Amorphous silica
		TLV	10 mg/m^3 (Inhalable particles)	Amorphous silica
		TLV-STEL	1,000 ppm	Butane
			Asphyxia	Propane

Facilities measures: Use explosion-proof electricity, ventilation, an illumination apparatus.
Take precautionary measures for the static electricity.
Install a washing eyes device and a safe shower in the storage to the workshop to handle with this material.
In the case of the handling in the room, become the sealing up of the emission source, or install a local exhaust.
Perform ventilation for the exhaust to keep a value of the atmospheric density recommended allowable density or less.

A tool of protection:
- For breathing: Depending on the situation, use a gas mask for the organic gas, a supply of air mask, air respiratory organs.
- For hands: Wear appropriate protection gloves (impermeable protection gloves).
- For eyes: Wear a tool for protection of appropriate eyes. Protection glasses (normal glasses type, side starting performing before the curtain rises normal glasses type, goggles type)
- For skin and physical: Wear a tool for protection such as protection boots, the oiliness (for preventive measures against imperviousness, static electricity) apron, hazmat suit (for preventive measures against static electricity)-resistant.

9. PHSICAL AND CHEMICAL PROPERTIES

Appearance:	White dispersion liquid	Flash point(Bulk) :	-4 ℃
Density／sp. Gravity (Bulk):	0.82	Boiling point (Bulk):	78.3 ℃
pH:	not avail.	Water solubility:	Mixing with water optionally
Odor:	Alcohol smell	Evaporation rate:	not avail
Vapor density:	1.6 (air = 1)	Vapor pressure:	5.878 kPa (20℃)

Jet agent: LPG	Propane	Butane
Melting point / Freezing point	: -190 ℃	-138 ~ -160 ℃
Boiling point	: -42 ℃	-0.5 ~ -11.7 ℃
Flash point	: -104 ℃	-56 ~ -60 ℃
Explosion limit	: 2.1 ~ 9.5 vol%	1.8 ~ 8.4 vol%
Vapor density (air =1)	: 1.6	2.07

10. STABILITY AND REACTIVITY

Stability: Stable under the normal condition

Dangerous adverse effect possibility: It reacts with a strong oxidizer intensely and brings a flame and an explosion.
It attacks various kinds of plastic and gum.

The condition that you should avoid:	The firing source such as a high temperature, a flame, the spark
Blend most moving passage hazardous substance:	Strong oxidizer, Strong acid, Strong alkali
Dangerous harmful decomposition product:	By hydrolysis and combustion, it produces carbon monoxide and carbon dioxide.

11. TOXICOLOGICAL INFORMATION

Acute toxicity (Oral) : Classification not possible
Ethanol: LD_{50} (rat) = 6.2 ~ 15.0 g/kg (DFGOT Vol.12 (1999))
n-Heptane: LD_{50} (rat) = 5,000 mg/kg (IUCLID (2000))
Amorphous silica: LD_{50} (rat) > 5,000 mg/kg (IUCLID (2000))
Because an unknown ingredient was included, the toxicity judged this product with "Classification not possible".

Acute toxicity (Dermal) : Classification not possible
Ethanol: LDL_0 (rabbit) = 20,000 mg/kg (SIDS (2009))
n-Heptane: LD_{50} (rabbit) = 3,000 mg/kg (IUCLID (2000))
Amorphous silica: LD_{50} (rat) > 5,000 mg/kg (IUCLID (2000))
Because an unknown ingredient was included, the toxicity judged this product with "Classification not possible".

Acute toxicity (inhalation: Gas) : Classification not possible
Propane: LC_{50} 277,374 ppm/4h (rat) ACGIH (7^{th}, 2001)
Butane: LC_{50} > 55,000 ppm/2h (marmot) ACGIH (7^{th}, 2001)

Acute toxicity (inhalation: Vapor) : Classification not possible
Ethanol: LC_{50} 20,661 ppm/4h SIDS (2009)
n-Heptane: LC_{50} 25,184 ppm/4h PATTY4th, 1994

Acute toxicity (inhalation: Dust and mist) : Classification not possible
Amorphous Silica: LC_0 0.139 mg/L/4h IUCLID (2000)
Because an unknown ingredient was included, the toxicity judged this product with "Classification not possible".

Skin corrosion/irritation : Category 2
n-Heptane: Category2
Because an ingredient classified in Category2 was included more than 10%, we took it as Category2.

Eye damage/eye irritation : Category 2A
Ethanol: Category2B (SIDS(2009), DFGOT Vol.12(1999))
n-Heptane: Category2B (IUCLID(2000))
Non-ionic Surfactant: Category1
10 × (skin Category1 + eye Category1) + eye Category2 ≧ 10 %

Respiratory sensitization : Classification not possible
There is not useful information and cannot classify it.

Skin sensitization : Classification not possible
There is not useful information and cannot classify it.

Germ cell mutagenicity : Classification not possible
Ethanol: Not classified
Because an unknown ingredient was included, the toxicity judged this product with "Classification not possible".

Carcinogenicity : Classification not possible
Ethanol: Classification not possible
There is not useful information and cannot classify it.

Reproductive toxicity : Category1A
Ethanol: Category1A (IARC vol.44(1987), SIDS(2009), DFGOT Vol.12(1999))
Because an ingredient classified in Category1A was included more than 0.3%, we took it as Category1A.

Specific target organ toxicity-Single exposure : Category3 (Respiratory tract irritation, Narcotic effects)
Ethanol: Category3(Respiratory tract irritation, Narcotic effects)
(ACGIH(2001), PATTY(5th, 2001), SIDS(2009), DFGOT(vol.12))
n-Heptane: Category3(Respiratory tract irritation, Narcotic effects)
(ACGIH(7th, 2001), DFGOT vol.11(1998))
Propane: Category3(Narcotic effects) (ACGIH(7th, 2001))
Butane: Category3(Narcotic effects)
(ACGIH(7th, 2001), DFGOT vol.20(2003), PATTY(4th,1994))
Because an ingredient classified in Category3 (Respiratory tract irritation, Narcotic effects) was included more than 20%, we took it as Category3 (Respiratory tract irritation, Narcotic effects).

Specific target organ toxicity-Repeated exposure : Category1 (Liver)
Category2 (Central nervous system)
Ethanol: Category1(Liver) (DFGOT(1996))
Category2 (Central nervous system) (HSDB(2003))
Because an ingredient classified in Category1 (Liver) was included more than 10%, we took it as Category1 (Liver).
Because an ingredient classified in Category2 (Central nervous system) was included more than 10%, we took it as Category2 (Central nervous system).

Aspiration toxicity : Not classified
Because a product is atomized in the state of the mist, aerosol does not usually correspond.

12. ECOLOGY INFORMATION

Habits toxicity:	Acute hazardous to the aquatic environment	: Category 1 n-Heptane: Catgeory1 LC_{50} (96h) = 0.1 mg/L (HSDB(2006)) Acute1 × M ≧ 25％
	Long-term hazardous to the aquatic environment	: Category 1 n-Heptane: Category1 (PHYSPROP Database(2009)) Chronic1 × M ≧ 25％
Residual property / Degradability		: No data
Bioaccumulation characteristics		: No data
Mobility to soil		: No data
Hazards to the ozone layer		: Not classified There is not useful information and cannot classify it.

13. DISPOSAL CONSIDERATIONS

Material Disposal: Recover or recycle if possible.
It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste classification and disposal methods in compliance with applicable regulations.
Do not dispose into the environment, in drain or in water courses.
Waste product should not be allowed to contaminate soil or water.

Container Disposal: Drain container thoroughly. After draining, vent in a safe place away from sparks and fire.
Residues may cause an explosion hazard.
Do not puncture, cut or weld uncleaned drums.
Send to drum recover or metal reclaimer.

Local Legislation: Disposal should be in accordance with applicable regional, national, and local laws and regulations.
Local regulations may be more stringent than regional or national requirements and must be in compliance.

14. TRANSPORT INFORMATION

IMDG: General Index	**Aerosol**
UN No. :	1950
Proper shipping name:	Aerosols
Hazard class or Division:	2.1
Packing Group	—

15. REGULATORY INFORMATION

Follow all regulations in your country.

16. OTHER INFORMATION

Safety data sheets are provided as reference information on the safe handling of hazardous or harmful materials to companies using such materials.

When referring to this data sheet, companies should remember that they must take responsibility for implementing the proper measures for their own particular situations.

This data sheet is not a guarantee of safety and is prepared to provide all the information that we understand now. It may have other dangers that are not written in this sheet.