Safety Data Sheet

Reference No. 1560

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1. Chemical product and company identification

Product name DPR Reagent: Chromium (Hexavalent) (Low Range) Model DPR-Cr^{6+}D

Company name KYORITSU CHEMICAL-CHECK Lab., Corp.
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Recommended uses and restrictions Reagent for water quality measurement

2. Hazards identification

[GHS Classification**]**

Physical hazards:

Flammable liquids:	Category 3	(applicable only R-2 and R-3 reagents)

For those physical hazards not listed above are not classified or classification not possible (no data for GHS classification available)

Health hazards:

Skin corrosion/irritation:	Category 1	(applicable only R-1 reagent)
Serious eye damage/eye irritation:	Category 1	(applicable R-1 and R-2 reagents)
	Category 2B	(applicable only R-3 reagent)
Germ cell mutagenicity:	Category 1	(applicable only R-2 reagent)
Reproductive toxicity:	Category 1	(applicable only R-3 reagent)
	Category 2	(applicable only R-2 reagent)
Specific target organ toxicity (single exposure):		
	Category 3 (respiratory irritation, anesthetic action)	(applicable only R-2 and R-3 reagents)
Specific target organ toxicity (repeated exposure):		
	Category 1 (liver)	(applicable only R-3 reagent)
	Category 2 (nervous)	(applicable only R-3 reagent)

For those health hazards not listed above are not classified or classification not possible (no data for GHS classification available)

Environmental hazards:
Not classified or classification not possible (no data for GHS classification available)

[GHS labeling elements**]**

[Signal word**]**
Danger

[Hazard statements**]**

Flammable liquid and vapor.	(applicable only R-2 and R-3 reagents)
Causes severe skin burns and eye damage.	(applicable only R-1 reagent)
Causes serious eye damage.	(applicable only R-1 and R-2 reagents)
Causes eye irritation.	(applicable only R-3 reagent)
May cause genetic defects.	(applicable only R-3 reagent)
May damage fertility or the unborn child.	(applicable only R-3 reagent)
Suspected of damaging fertility or the unborn child.	(applicable only R-2 reagent)
May cause respiratory irritation.	(applicable to only R-2 and R-3 reagents)
May cause drowsiness or dizziness.	(applicable to only R-2 and R-3 reagents)
Causes damage to liver through prolonged or repeated exposure.	(applicable only R-3 reagent)
May cause damage to nervous system through prolonged or repeated exposure.	(applicable only R-3 reagent)

[Precautionary statements**]**

Keep out of reach of children and store in the cool and dark place.
Carefully read instructions before use and do not use for other purposes.
Wear personal protective equipment if necessary.
Do not inhale reagents.
Wash contaminated clothing.
Wash hands thoroughly before and after handling.
Avoid release to the environment.

3. Composition/ information on ingredients

Discrimination of single substance or mixture: Mixture

Reagent name	R-1 reagent			R-2 reagent		
Chemical name	Diphenyl-carbazide	Buffering agent	Extender	1-Propanol (Normal-propyl alcohol)	Others	Water
Content	< 2%	> 49%	> 49%	< 60%	< 10%	> 70%
Chemical formula	$C_{13}H_{14}N_4O$	-	-	C_3H_7OH	-	H_2O
METI No. (reference number under CSCL in Japan)	3-2202	-	-	2-207	-	-
CAS No.	140-22-7	-	-	71-23-8	-	7732-18-5

Reagent name	R-3 reagent	
Chemical name	Ethanol	Water
Content	< 60%	> 40%
Chemical formula	C_2H_5OH	H_2O
METI No. (reference number under CSCL in Japan)	2-202	-
CAS No.	64-17-5	7732-18-5

4. First-aid measures

If reagents or test solutions;

Enter in eyes:	Immediately rinse with water for more than 15 minutes followed by the treatment by an ophthalmologist.
Contact with skin:	Immediately wash out contaminated site with plenty of water.
Enter into mouth:	Immediately rinse mouth with plenty of water.

If any symptoms appear after above measures, immediately get medical advice or treatment.
Especially in case ingested reagents or test solutions, immediately get medical advice or treatment.

5. Fire-fighting measures

Extinguishing methods: Cut off ignition sources and extinct by a suitable media.
Suitable extinguishing media: Water (mist), powder, carbon dioxide, dry sand.

6. Accidental release measures

In case of outdoor use: avoid spill of reagents or waste solutions.
In case of indoor use: if spilled on a table or floor, wipe off immediately spilled reagents and dispose of them. Do not contact with eyes and skin.
Concentrated waste solution should not be released into sewer or rivers.

7. Handling and storage

Handling: Avoid contact of reagents with your skin or eyes, and inhalation of those especially powder in tube. A pH ofthe sample solution after addition of R-1 reagent is lower than 2, acidic. Care should be made so as to avoidcontact with eyes or skin.
For outdoor use, ensure to bring back reagents, waste solutions after the measurement and used containers.
Storage: Avoid direct sunlight and store in a well-ventilated, cool, dry and dark place.

8. Exposure controls and personal protection

Administrative control level:

Working environment standard	Not established

Occupational exposure limits:

Japan Society for Occupational health:	Not established
ACGIH (TLVs)	TWA 100 ppm (only 1-Propanol) TWA 1000 ppm (only Etanol)
OSHA (PEL)	8H air TWA 200 ppm, 500 mg/m^3; skin (only 1-Propanol) 8H air TWA 1000 ppm, 1900 mg/m^3 (only Etanol)

Protective equipment: Recommend to wear protective glasses and gloves.

9. Physical and chemical properties

Physical state:	R-1 reagent: Powder reagent, 0.4 g x 20 tubes/kit in aluminum laminated packaging R-2 and R-3 reagents: Liquid reagent, 40 mL x 1 bottle/kit in Polyethylene-bag
Color:	R-1 reagent: White powder (turn to be showy pink in the presence of air) R-2 and R-3 reagents: Clear and colorless liquids
Odor:	R-1 reagent: No odor R-2 and R-3 reagents: Irritating odor
pH:	< 2 (R-1 reagent, and the sample solution after addition of R-1 reagent) R-2 reagent: 9 R-3 reagent: 7

Melting point, boiling point, flash point, ignition point, lower explosion limit, vapor pressure, density, relative density, solubility, P_{ow}, kinetic viscosity: not available as a mixture

Note that 1-Propanol has a flash point of 15 ºC and a boiling point of 97 ºC, Ethanol has a flash point of 13 ºC and a boiling point of 78.5 ºC. They are classified as flammable liquid Category 2 (Danger, Highly flammable liquid and vapor) by NITE, respectively.
This product is classified as flammable liquid Category 3 (Warning, flammable liquid and vapor) because R-2 and R-3 reagents contain more than 10% of 1-Propanol or Ethanol, and 0.04% Phenolphthalein Ethanol solution (40) manufactured by Wako Pure Chemical Industries Ltd. is classified as Category 3 in MSDS “No. JW162060 (revised 2010.07.08)”, and 1-Propanol has chemical properties similar to those of Ethanol.

10. Stability and reactivity

Avoid leaving in a place where high temperature, humid or under direct sunlight.
No data on flash point, ignition point, explosion limits and dangerous/hazardous decomposition product is available. Although 1-Propanol vapor and Ethanol vapor generate explosive mixed gas with air, stable under normal handling conditions and no dangerous reaction is expected to occur under specific conditions.

11. Toxicological information

No data on mixture is available. Data on R-1, R-2 and R-3 reagents are shown below.

R-1 reagent

Diphenylcarbazide:

Acute toxicity: Oral-rat LD_{50} > 500 mg/kg (RTECS)

Other data: Not available

R-2 reagent

1-Propanol (Normal-propyl alcohol) (no data on aqueous solution):

Acute toxicity:

Oral: Not classified. Rat LD50 = 1900 mg/kg (ACGIH, 2004), 1870 mg/kg(PATTY, 4th,1994), 5400 mg/kg (PATTY, 4th, 1994), 6500 mg/kg (PATTY, 4th, 1994; EHC102, 1990) and 2200 mg/kg (risk assessment by Ministry of the Environment of Japan (Vol.6, 2008)).

Dermal: Not classified. Rabbit LD50 = 6700 mg/kg (PATTY, 5th, 2001; ACGIH, 2007), 4060 mg/kg (ACGIH, 2007), 4000 mg/kg (PATTY, 5th, 2001) and 4050 mg/kg (EHC102, 1990).

Vapor: Insufficient data is available. For reference, 4 hours of exposure to rats at 4000 mg/L (9.84 mg/L) killed two sixth of them (EHC102, 1990; PATTY, 5th, 2001).

Skin corrosion/ irritation:

Not classified. Irritation tests with rabbits indicated in very slightly irritating or not irritating (PATTY, 5th, 2001; IUCLID, 2000).

Serious eye damage/ eye irritation:

Classified as Category 1. Irritation test with rabbit's eye resulted in severe conjunctivitis, iris inflammation, clouding of the cornea and formation of an ulcer (ACGIH, 2004; PATTY, 5th, 2001; and EU classify as Xi;R41).

Respiratory or skin sensitization:

Respiratory sensitization: Data not available.

Skin sensitization: Classification is not possible. Maximization test with guinea pigs (IUCLID, 2000) and ear-swelling test with mice (EHCNo.102, 1990) reported no sensitizing respectively, but the former was information on List 2 without tangible data, and the latter based on discouraged classification method. For reference, one positive result of patch test with human skin was reported (EHCNo.102, 1990), but no sensitizing result was also reported (IUCLID, 2000).

Germ cell mutagenicity:

Classification is not possible. In vivo somatic mutagenicity test with bone marrow of rats after oral administration reported structural chromosomal and numerical aberration (BUA Report No.190, 1998), but it was incomplete as evidence, and methodological flaws were also described. For reference, negative results of Ames test, micronucleus test and sister chromatid test with cultured cell of guinea pigs were reported (ACGIH, 2007; PATTY, 5th, 2001; EHC102, 1990).

Carcinogenicity:

Not classified based because ACGIH (2009) classified as A4. Moreover, two animal bioassays indicated increment of hepatic sarcoma, but they were not able to classified as A3 (ACGIH(2009)) because the assays were improper about design and performed on single order dose.

Reproductive toxicity:

Classified as Category 2. Inhalation exposure tests with rats (males were mated with unexposed females after six weeks exposure, females were in pregnancy of first to ninth day) reported decay of male reproductive potential (ACGIH, 2007) and significant increase of embryo (risk assessment by Ministry of the Environment of JAPAN (Vol.6, 2008); PATTY, 5th, 2001). These tests were performed under general toxicity expressing level, such as inhibition of mother weight increase and feed intake reduction.

Specific target organ toxicity (single exposure):
Classified as Category 3 (narcotic effect). Inhalation exposure tests with rats resulted in deep anesthesia (EHC102, 1990; PATTY, 5th, 2001); anesthetic ED50 value of 1440 mg/kgbw was reported (EHC102, 1990). Meanwhile, 1-Propanol is also classified as Category 3 (respiratory irritation) based on the following data: human irritant threshold level (eye and nose) were 4000-16000 ppm. For reference, EHC102(1990) reported main toxicity effect after single exposure was inhibition of the central nervous system. Any harmful effects were not reported, except only one case of human toxication that a half-liter intake of 1-Propanol as solvent in cosmetic agent resulted in loss of consciousness and death after 4-5 hours (EHC102, 1990).

Specific target organ toxicity (repeated exposure):
Classification is not possible because of data deficiency. For reference, oral exposure tests with rats for 13 weeks or year and a half reported hepatic steatosis, necrosis, fibrotic response and hyperplasia of hematogenic parenchyma (risk assessment by Ministry of the Environment of Japan (Vol.6, 2008), EHC102(1990), BUA Report No.190(1998)). But these tests were performed under higher doses level more than guidance range.

Other data: Not available

Water:

Acute toxicity:

Oral:	Human-infant TDL_0 = 333 g/kg, cramping, attacks or fever.
	Human-men TDL_0 = 42.86 g/kg, shaking, muscle pain.
	Rat LD_{50} > 90 ml/kg
Intravenous:	Mouse- LD_{50} = 25 g/kg
intraperitoneal:	Mouse- LD_{50} = 190 g/kg
Other data:	Not available

R-3 reagent

Ethanol (no data on aqueous solution):

Acute toxicity (oral):
Not classified based on the following data: Rat-oral LD_{50} = 6200-15000mg/kg bw (DFGOT Vol.12 (1999)), 13700mg/kg, 17800mg/kg, 11500mg/kg (Patty (5th, 2005)), 9.8-11.6 ml/kg bw(7938-9396 mg/kg), 15010 mg/kg bw, 7000-11000 mg/kg bw, 14.6 ml/kg bw(11826 mg/kg), 7800 mg/kg bw, 11500 mg/kg bw, 11170-16710 mg/kg bw, 7060 mg/kg bw, 8300 mg/kg bw (SIDS(J)(2009)).

Acute toxicity (inhalation: vapor):
Not classified based on the following rat-inhalation LC_{50} data: One corresponded to Category 4 (3837ppmV(SIDS(2009)), and other four corresponded to outside of classification (63000ppmV (4h)(DFGOT Vol.12(1999)), 20661ppmV(4h), 66181ppmV(4h), 22627ppmV(4h)(SIDS (2009)). It used the gaseous standard value because the concentration of the test substance was lower than 90% (70,223ppmV (132.4 mg/L)) of the saturated vapor pressure, 78,026ppmV(147.1 mg/L).

Skin corrosion/ irritation:
Not classified based on the following data: In the exposure test to rabbit for 4h (OECD TG 404), the average scores of the erythema for 1 and 24h after adhibition were 1.0, and those of the erythema and edema for other time after were 0.0, hence no irritating properties were evaluated (SIDS(2009)).

Serious eye damage/ eye irritation:
Classified as Category 2B based on the following data: Ethanol is evaluated as moderate irritating in Draize tests (OECD TG405) with rabbit (SIDS (2009), DFGOT Vol.12 (1999)). It caused cloudy cornea, iris inflammation, conjunctival redness, and conjunctival chemosis within 1-3 days. MMAS (Modified Maximum Average Score: correspond to AOI) indicated 24.0. Moreover the symptoms were almost recovered improvement within 7 days.

Respiratory or skin sensitization:

Respiratory sensitization:
Classification is not possible because data is not conclusive. Following findings were reported: Inducement of bronchial asthmatic symptom caused by alcohol seemed to be concerned with increment of blood-aldehyde concentration (DFGOT (1996)). Two asthmatic patients of mild degree were affected with massive bronchoconstriction on inhalation challenge test with Ethanol, but the results did not indicate from allergies (DFGOT (1996)).

Skin sensitization:
Classification is not possible because data is not conclusive. Following findings were reported: “Contact dermatitis in human epidemiological studies which relate to allergic reaction against alcohols.” (DFGOT(1996)). “Although cross-reactions with primary and secondary alcohols are observed, no sufficient data is available to conclude Ethanol is a skin sensitizer."(ACGIH (2001), DFGOT (1996) and IUCLID (2000)).

Germ cell mutagenicity:

Classified as Category 1B because of positive results in dominant lethal tests (*in vibo* heritable mutagenicity assays to germ cell) of oral administration in rats and mice (intraperitoneal administration in mice, further) (SIDS (2009), IARC (1988)). All Ames tests as *in vibo* heritable mutagenicity assays indicated negative results (DFGOT Vol.12 (1999), SIDS(2009), NTP DB (2009)). All chromosome aberration analyses indicated negative results, except one positive result with CHO cell (SIDS(2009)).

Carcinogenicity:

Classification is not possible at this point, evaluated depending on the following data: ACGIH classified Ethanol as A3 (ACGIH(2009)), corresponding to Category 2. The date was obtained from tests of lifetime oral administration in male and female rats through drinking water, conducted at high level (10% of concentration) simulated alcohol drinking by human. Other oral administration tests in male and female rats through liquid feed at lower levels (1% or 3%) for 2 years did not indicate clear carcinogenic (ACGIH(2009)). Furthermore, a proviso was added that the data is not based on epidemiological studies in human work exposure, but on animal experiments, so effects on human were not clear. IARC classified alcoholic beverages as Group 1, based on many epidemiological studies to human taking it habitually (IARC Vol. 44 (1987)). On a re-evaluating in 2007, IARC classified again alcoholic beverages and Ethanol in them as Group 1 (IARC vol. 96 summary (Access on Oct., 2009)). The data was based on experiments of human feeding preferably and habitually (IARC vol. 96 was not released). EU has not been classified Ethanol about Carcinogenicity.

Reproductive toxicity:

Classified as Category 1A based on the following data, indicated clear reproductive toxicity to human: Large number of epidemiological information about Ethanol were reported. Previous prospective studies and case-control studies reported that alcohol drinking over a certain amount increased risk of miscarriage and developmental infection (IARC vol.44(1987)). Some studies reported that habitually alcohol drinking caused growth inhibition, microcephalus, characteristic facies and mental disorder etc. (IARC vol.44(1987), SIDS (2009), DFGOT Vol.12 (1999)). Other abnormality caused by prenatal intake of Ethanol was reported, such as cleft palate, abnormal palmar crease, defect of the interventricular septum and defect of ustachian. Another reports suggested strongly that high Ethanol intake by a pregnant woman caused teratogenesis and embryotoxicity (SIDS (2009)). Animal experiments indicated that untoward effects was not found on lifetime tests in rats or mice (SIDS (2009)), and decrement of surviving littermate on two generation tests in mice (SIDS (2009)). Some oral study in rats through pregnancy reported deformations such as polydactylism and polysyndactyly (IARC vol.44(1987)).

Specific target organ toxicity (single exposure):

Classified as Category 3 (narcotic effect) based on the following data: Inhalational exposure tests in human indicated somnolentia and mild degree of paralysis (ACGIH (2001)). Acutely toxic effect from Ethanol intake was described as disorder of the central nervous system (DFGOT Vol.12 (1999)). On severe poisoning, symptoms such as muscular deconditioning, blurred vision, stupor, hypothermia, feeling of sickness, emesis and twitch were observed. Furthermore, high-dose Ethanol intake caused death as a result of respiratory or cardiovascular failure, or else aspiration of gastric contents in cases of lack of faucial reflex (Patty (5th, 2001)). Inhalational exposure tests in rats, mice and guinea pig reported symptoms such as freezing, somnolentia and ataxia, in addition to the above symptoms in human (SIDS(2009), DFGOT Vol.12 (1999)).

Meanwhile, Ethanol was also classified as Category 3 (respiratory irritation) based on the following data: Inhalational exposure in human caused irritation of eye and upper airway even at low level (ACGIH (2001)). Inhalational exposure caused cough and pain in eye and nasal cavity (Patty (5th, 2001)). Inhalational exposure tests in non-resistant human subject reported nasal stinging (Patty (5th, 2001)).

Specific target organ toxicity (repeated exposure):

Classified as Category 1 (liver system) based on the following date: High-dose and long-term intake of Ethanol in human cased adverse effects on almost all organs. Especially, the strongest impact was affected to liver. The damage was initiated by fatty degeneration, through a stage of necrosis and fibrosing, developed cirrhosis (DFGOT (1996)).

Meanwhile, Ethanol was also classified as Category 2 (nervous system) based on the following data: Patients with heavy physical alcoholism experienced withdrawal symptoms of thrill, twitch and subdelirium, often with feeling of sickness, weakness, insecurity and sweating. Intentional behavior to take alcohol and clear hyperreflexia were also observed (HSDB (2003)). Incidentally, animal experiments indicated that onset of adverse effects was not very aggressive. Oral exposure tests in rats or mice across 90 days reported fatty degeneration as effects on liver at high-dose level much higher than the value of guidance (SIDS (2009)).

Other data: Not available

Water: Same as above R-2 reagent

GHS classification results of R-1, R-2 and R-3 reagents as mixtures are shown below.

[Acute toxicity (oral)]
All reagents are not classified based on application of the additive equation.

[Skin corrosion/ irritation]
R-1 reagent: pH < 2; Classified as Category 1 (Danger, Causes severe skin burns and eye damage.).
R-2 and R-3 reagents: Classification is not possible because of data lack.

[Serious eye damage/ eye irritation]
R-1 reagent: pH < 2; Classified as Category 1 (Danger, Causes serious eye damage.).
R-2 reagent: Contains more than 3% of Category 1 substances; Classified as Category 1 (Danger, Causesserious eye damage.).
R-3 reagent: Contains more than 10% of Category 2B substances; Classified as Category 2B (Warning,Causes eye irritation.)

[Germ cell mutagenicity]
R-3 reagent: Contains more than 0.1% of Category 1B substances; Classified as Category 1 (Danger, May cause genetic defects.)
R-1 and R-2 reagents: Classification is not possible because of data lack.

[Reproductive toxicity]
R-2 reagent: Contains more than 3% of Category 2 substances; Classified as Category 2 (Warning, suspected of damaging fertility or the unborn child.).
R-3 reagent: Contains more than 0.3% of Category 1A substances; Classified as Category 1 (Danger, May damage fertility or the unborn child.) .
R-1 reagent: Classification is not possible because of data lack.

[Specific target organ toxicity (single exposure)]
R-2 and R-3 reagents: Contains more than 10% of Category 3 (respiratory irritation, anesthetic action) substances; Classified as Category 3 (Warning, May cause respiratory irritation, May cause drowsiness or dizziness.).
R-1 reagent: Classification is not possible because of data lack.

[Specific target organ toxicity (repeated exposure)]
R-3 reagent: Contains more than 10% of Category 1 (liver) and Category 2 (nervous system) substances; Classified as Category 1 (Danger, Causes damage to liver through prolonged or repeated exposure.) and Category 2 (Warning, May cause damage to nervous system through prolonged or repeated exposure.)
R-1 and R-2 reagents: Classification is not possible because of data lack.

[Acute toxicity (dermal)], [Acute toxicity (inhalation)], [Respiratory or skin sensitization],, [Carcinogenicity], [Aspiration hazard]:
Classifications are not possible because of data lack.

12. Ecological information

No data on mixture is available. Data on R-1, R-2 and R-3 reagents are shown below.

R-1 reagent
Diphenylcarbazide: No eco-toxicological information available.

R-2 reagent
1-Propanol (Normal-propyl alcohol):
Hazardous to the aquatic environment acute:
Not classified because of the following data:
Crustacea (ceriodaphnia dubia): 48h LC50 = 3025 mg/L (EHC102, 1990, etc)
Hazardous to the aquatic environment chronic:
Not classified because 1-Propanol is not classified as the acute toxicity, and it does not indicate poor water solubility (aqueous solubility = 1000000 mg/L (PHYSPROP Database, 2009))
Harmful effects on the ozone layer:
Classification is not possible because the substance is not described in Annex to Montreal Protocol.

R-3 reagent
Ethanol:
Hazardous to the aquatic environment Acute:
Not classified because of the following data:
Fish (*Pimephales promelas*): 96h LC_{50} > 100 mg/L (SIDS, 2005)
Crustacea (*Ceriodaphnia quadrangular*): 48h LC_{50} = 5012 mg/L (SIDS, 2005)
Algae (chlorella): 96h EC_{50} = 1000 mg/L (SIDS, 2005)
Hazardous to the aquatic environment Chronic:
Not classified based on Ethanol is not classified as the acute toxicity, and it does not indicate poor water solubility (aqueous solubility = 1000000 mg/L (SIDS, 2005)).
Harmful effects on the ozone layer:
Classification is not possible because the substance is not described in Annex to Montreal Protocol.

GHS classification results of R-1, R-2 and R-3 reagents as mixtures are shown below.

[Hazardous to the aquatic environment Acute], [Hazardous to the aquatic environment chronic]:

R-1 and R-2 reagents: Classifications are not possible because of data lack.

R-3 reagent: Not classified based on data of ingredients.

[Harmful effects on the ozone layer]:

Classification is not possible because each of the substances is not described in Annex to Montreal Protocol.

13. Disposal considerations

The pH of sample solution is about 1 after addition of R-1 reagent, and about 2 after addition of R-2 reagent.
Always dispose of in accordance with local regulations.

14. Transport information

In addition to precautionary measures regarding handling and storage, avoid rough handling so as not to break containers. Air transportation is recommended for long-distance haul, because under high temperature for long period may lead to deterioration.

UN number:	3316
Proper shipping name:	Chemical Kit (Chemical measurement kit)
UN classification:	Class 9 (miscellaneous dangerous substances and articles)
Packing group:	II
Civil Aeronautics Act:	Same as above. Applicable as Dangerous Goods.
Poisonous and Deleterious Substances Control Act:	Not applicable.
Fire Service Act:	Not applicable
Total weight of the product:	ca. 280 g/kit

15. Regulatory information

PRTR Act: Not applicable

Industrial Safety and Health Act: Applicable

R-2 reagent contains more than 1% of 1-Propanol.

: “Cabinet order, article 18, shall be notified the Name of the substances, #2”

: “Cabinet order, article 18-2, shall be indicated the Name of the substances, #2”

R-3 reagent contains more than 0.1% of Ethanol.

: “Cabinet order, article 18, shall be notified the Name of the substances, #2”

: “Cabinet order, article 18-2, shall be indicated the Name of the substances, #2”

Waste Disposal and Cleaning Act: Applicable

Applicable as the Special Controlled Industrial Waste under the Act because pH of waste solution aftermeasurement is less than 2.

16. Other information

Reference literature

15,911 no Kagaku Shouhin, The Chemical Diary Co., Ltd. (2011)
NITE, GHS Classification, ID 21B3052 Normal-propyl alcohol (2010.02.19)
NITE, GHS Classification, ID 21B3016 Ethanol (2010.02.19)
Material Safety Data Sheet No.JW040392, Wako Pure Chemical Industries, Ltd. (2010.03.26)
Material Safety Data Sheet No.JW160481, Wako Pure Chemical Industries, Ltd. (2012.03.19)
Material Safety Data Sheet No.JW162060, Wako Pure Chemical Industries, Ltd. (2010.07.08)
Material Safety Data Sheet No.JW050044, Wako Pure Chemical Industries, Ltd. (2011.08.31)
Koukuu Kikenbutsu Yusou Houreisyu, Ed. MLIT, HOUBUN SHORIN Co., Ltd. (2015)
JIS Z 7252:2014 Classification of chemicals based on “Globally Harmonized System of Classification and Labelling of Chemicals (GHS)” (Japanese Industrial Standards Committee)
JIS Z 7253:2012 Hazard communication of chemicals based on GHS-Labelling and Safety Data Sheet (SDS) (Japanese Industrial Standards Committee)
UN GHS (tentative translation, forth revised version), GHS Kankei Syocho Renraku Kaigi (2011)
Ministry of Economy, Trade and Industry, GHS Classification Guidance for Enterprises 2013 Revised Edition (2013)

NOTE) This information is not always exhaustive and use with care.
This data sheet only provides information but any description cannot be warranted.
Descriptions may possibly be changed because of new findings or modification of the current knowledge.
Precautions only cover normal handling.
This English SDS is prepared in the cooperation with the Chemicals Evaluation and Research Institute (CERI), Japan.