

Material Safety Data Sheet

Revision date: 11.10.10

REA-JET TKD-GN 010 Ink

Page 1 of 5

1. Product and company Identification

1.1 Commercial product name

REA-JET TKD-GN 010 Ink

1.2 Product number IJ050-9004-27

1.3 Chemical Characterization Preparation of organic solvents, colorants, binders and additives.

**1.4 Emergency telephone: Chemtrec 24-hour telephone # 800-424-9300
International 24-hour telephone # 703-527-3887**

2. Hazards Identification

Signs and Symptoms of Exposure

Carcinogenicity (NTP):	None
Carcinogenicity (IARC):	Isopropanol (CAS 67-63-0) is listed in group 3.
Carcinogenicity (OSHA):	None

2.2 Special hazards for human health and environment

In case of insufficient ventilation and/or through use, explosive/highly flammable mixtures may develop. Water risk class: 1
Mild water pollutant. Low odor threshold. Irritating to respiratory system and skin. Symptoms: Nausea. Vomiting. Headache.
Dizziness. Unconsciousness. Haemolysis liver function disorder. Kidney function disorder. With Aspiration, it can result a
pulmonary oedema and pneumonia.

3. Composition/Information on Ingredients

3.2 Hazardous components

Components	CAS No.	Quantity
Butanone, ethyl methyl ketone	78-93-3	85-90%
Nitrocellulose (Nitrogen content < 12.6%)	9004-70-0	1-5%
A mixture of- [tris[[[3-[2-ethylhexy]oxy]propyl]amino]sulfonyl]-29H, 31H- Phthalocyaninsultionate(3-) N29, N30, N31,N32]cuprat(1-), mixed with 3-[(2-ethylhexyl)oxy]propylamin (1:1)	94277-77-1	1-5%
Isopropanol	67-63-0	1-5%

4. First Aid Measures

General Information: In case of accident or if victim feels sick, seek medical advice immediately (show safety data sheet if possible). Immediately take off all contaminated clothing. If victim is at risk of losing consciousness, position and transport victim on his/her side. A physician should decide which measures to take.

4.1 After inhalation: In case of accident by inhalation, remove victim to fresh air and keep at rest. Consult physician

4.2 After contact with skin: After contact with skin, immediately take off all contaminated clothing, and immediately wash skin with plenty of water and soap.

4.3 After contact with eyes: Take off lenses. Immediately flush eyes with plenty of flowing water for 15 minutes holding eyelids apart. Consult physician.

4.4 After ingestion: Calm the victim. Rinse mouth thoroughly with water. Immediately get medical attention. Let water be swallowed in little sips (dilution effect). Do not induce vomiting. Milk or fat oils are strongly contraindicated. Do not allow the victim to drink a neutralization agent.

5. Fire Fighting Measures

5.1 Suitable extinguishing media: Alcohol resistant foam. Carbon dioxide (CO₂). Dry extinguishing powder. Water spray. Atomized water.

5.2 Unsuitable extinguishing media: High power water jet

5.3 Special hazards arising from the chemical: In case of fire may form: Carbon monoxide. Nitrogen oxides (NO_x). Vapors may form explosive mixtures with air.

Material Safety Data Sheet

Revision date: 11.10.10

REA-JET TKD-GN 010 Ink

Page 2 of 5

5.4 Protective equipment and precautions for firefighters: Wear a self-contained breathing apparatus and chemical resistant suit.

5.5 Additional information: Temperature class T 1 (Ignition temperature: >450 °C)

6. Accidental Release Measures

6.1 Personal precautions: Provide fresh air. Avoid contact with skin and eyes. Wear suitable gloves. NR (Natural rubber (Caoutchouc), Natural latex). NBR (Nitrile rubber) limited resistance, Butyl rubber. In the cases of special applications, it is recommended to check the chemical resistance with the manufacturer of the gloves. Wear eye/face protection. If technical suction or ventilation measures are not possible or are insufficient, protective breathing apparatus must be worn. The filter class must be suitable for the maximum contaminant concentration (gas/vapor/aerosol/particulates) that may arise when handling the product. If the concentration is exceeded, self-contained breathing apparatus must be used.

6.2 Environmental precautions: Due to danger of explosion, prevent leakage of vapors into cellars, flues and ditches. Do not empty into drains or the aquatic environment. Explosion hazard.

6.3 Methods for cleaning up/taking up: Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents). Clean contaminated objects and areas thoroughly observing environmental regulations. Treat the assimilated material according to the section on waste disposal.

6.4 Additional information: Keep away from sources of ignition. No smoking. Do not breathe gas/fumes/vapor/spray. The product is partially water mixable.

7. Handling and Storage

7.1 Advice on safe handling: When handling with chemicals, please consider usual precautionary measures. Wear suitable protective clothing, gloves and eye/face protection. See protective measures under point 7 and 8. Do not leave the container open. Handle open container with care. Keep container tightly closed. If technical suction or ventilation measures are not possible or are insufficient, protective breathing apparatus must be worn. When using do not eat, drink or smoke. Protect skin by using skin protective cream. Wash hands when done working with material; at breaks, lunch, shift changes, etc. Keep away from food, drink and animal feeding stuffs. Never clean the skin or the clothes with the preparation!

7.2 Advice on protection against fire and explosion: The vapors are heavier than air and can accumulate in high concentrations on the ground, in cavities, channels and cellars. In use, may form flammable/explosive vapor-air mixture. Take precautionary measures against static discharges. Keep away from sources of ignition. No smoking. Highly flammable.

7.3 Further information on handling: Vapors / aerosols should be extracted by suction directly at point of origin. See information supplied by the manufacturer. For limiting the emission through volatile organic compounds (VOC), the solvent vapors should be forwarded to an emission control facility. Please note the manufacturer indications for storage conditions and shelf life. When storing outside the recommended storing temperatures, the shelf life can be shortened. Inappropriate storage may conduct to endangerment of persons and environment.

7.4 Requirements for storage rooms and vessels: Keep only in the original container in a cool, well ventilated place. Keep container tightly closed. Use appropriate containers, e.g. UN-approved HDPE or thin sheet packing, for decanting. In partially or completely disposed containers, there can be an accumulation of a potentially explosive atmosphere in their head space. - Rooms, in which inks are stocked, have to be equipped with sufficient air ventilation. Remove all sources of ignition. Protect against high warming or solar radiation. Recommended storage temperature: +15 °C - 25 °C. Highly flammable. Maximum period of storage (time): 18 months

8. Exposure Controls/Personal Protection:

8.1 Exposure limit values:

Exposure Limits

Components	CAS No.	ml/m ³	mg/m ³	Category	Origin
2-Butanone	78-93-3	200	200	TWQ (8hr)	REL
		300	885	STEL (15 min)	REL
isopropanol	67-63-0	400	980	TWA (8hr)	PEL
		400	980	TWA (8hr)	PEL
		500	1225	STEL (15 min)	REL

Exposure controls

Occupational exposure controls Technical measures and the application of appropriate methods of operation, as indicated in section 7, have precedence over to the application of personal protection equipment.

8.2 Protective and hygiene measures: Protect skin by using skin protective cream. Wash hands when done working with material; at breaks, lunch, shift changes, etc.

8.3 Respiratory protection: If technical suction or ventilation measures are not possible or are insufficient, protective breathing apparatus must be worn.

Respiratory filter A1 (brown) up to 1000 mL / m³ (ppm)

Material Safety Data Sheet

Revision date: 11.10.10

REA-JET TKD-GN 010 Ink

Page 3 of 5

Respiratory filter A1 (brown) up to 5000 mL / m³ (ppm)
Respiratory filter A1 (brown) up to 10000 mL / m³ (ppm)

- 8.4** **Hand protection:** Type of chemical protective gloves to choose depends on the concentration and quantity of dangerous substances as well as on work place specifications. In the cases of special applications, it is recommended to check the chemical resistance with the manufacturer of the gloves.
- 8.5** **Eye protection:** Tightly sealed safety glasses.
- 8.6** **Skin protection:** Carry long-sleeved, flame impeding and anti-static labor safety clothing
- 8.7** **Environmental exposure controls:** Please see sections 6 and 7
- 8.8** **Additional advice on control parameters:** Definition for section 8.1. H = absorbed by skin

9. Physical and Chemical Properties

9.1 Appearance

Form: liquid
Color: green
Odor: like acetone

9.2 Important health, safety and environmental information

pH-Value (at 20 °C):	not determined	DIN 19268
Melting point:	not determined	DIN 53181
Boiling point:	79 – 110°C	DIN 51751
Flash point:	-4°C	DIN51765
Explosive properties	Vapors may form explosive mixtures with air	
Lower explosion limits:	1.8 vol %	DIN51649
Upper explosion limits:	11.5 vol %	DIN51649
Oxidizing properties	not determined	
Vapor pressure (at 20°C)	105 hPa	DIN51754
Density (at 20°C)	~0.83 g/cm ³	DIN53217
Water solubility (at 20 °C)	250 g/L	
Partition coefficient	not determined	
Viscosity/dynamic (at 20 °C)	1.3 mPas	DIN 53018
Viscosity/kinematic (at 20 °C)	not determined	
Vapor density: (at 20 °C)	>1	
Evaporation rate (at 20 °C)	not determined	
Solvent separation test	not determined	

9.3 Other information

Ignition temperature:	505°C	DIN51794
VOC	95.443% (792.177 g/l)	
Maximum period of storage (time):	18 months	

10 Stability and Reactivity

10.1 Stability: Stable

10.2 Conditions to avoid: High warming > 45°C and / or solar radiation. Heating up forwards the transit of liquid to the vapor phase and the accumulation of potentially explosive atmosphere.

10.3 Materials to avoid: Keep away from strong acids, leachates, heavy metal salts and reducing materials

10.4 Hazardous decomposition products: Keep away from strong acids, leachates, heavy metal salts and reducing materials.

10.5 Possibility of Hazardous Reactions: None

10.6 Additional information: This product is stable

11. Toxicological Information

Acute toxicity

Acute toxicity, oral rat. LD50: 2737-3300 mg / kg / butanone
Acute toxicity, dermal rabbit. LD50: 3000-6480 mg / kg / butanone
Acute toxicity, inhalant rat LC50: 10000 mg/l/4h/ butanone

Specific effects in experiment on an animal: For this product there are currently no toxicological data available.

Corrosive and irritant effects For this product there are currently no toxicological data available.

Sensitising effects For this product there are currently no toxicological data available.

Severe effects after repeated or prolonged exposure For this product there are currently no toxicological data available.

Carcinogenic/mutagenic/toxic effects for reproduction For this product there are currently no toxicological data available.

Additional information on tests For this product there are currently no toxicological data available.

Empirical data on effects on humans For this product there are currently no toxicological data available

Further information Prolonged/repetitive skin contact may cause skin defatting or dermatitis. Highly fat solubilising effect. Danger of cutaneous absorption. Inhalation may cause headache, drowsiness, somnolence and perception disorder. Eye

Material Safety Data Sheet

Revision date: 11.10.10

REA-JET TKD-GN 010 Ink

Page 4 of 5

contact may cause heavy irritation and oedema formation of the conjunctiva. May cause damage on liver, kidneys and nervous system. Aspiration after swallowing and vomiting may conduct to heavy lung damages.

12 Ecological Information

12.1 Ecotoxicity:

Acute fish toxicity *Leuciscus idus*: LC50: 4600 mg / l / butanone, ethyl methyl ketone
 Bacterial toxicity: *Pseudomonas putida*: EC50: 1050 mg / l / butanone, ethyl methyl ketone
 Acute *Daphnia* toxicity *Daphnia magna*: LC50: >1000 mg / l / 96 h / butanone, ethyl methyl ketone

12.2 Mobility: Liquids partly soluble with water. The hazardous ingredients evaporate rapidly, when you clear them to the environment. In grounds: a moderate to high mobility of the solvents used in the preparation can be expected.

12.3 Persistence and degradability: Dangerous components: Solvents are biologically degradable. The used colorants are difficult to dissolve in water. Colorants are, according to regulations, very resistant and therefore, under the conditions of clarification plants or surface water poorly bio-degradable

12.4 Bioaccumulative potential: No indication of bio-accumulation potential

12.5 Other adverse effects: Water risk class: 1 Mild water pollutant

12.6 Further information: Eco-toxicological data have not been identified especially for this preparation. The indicated information is based on the current state of knowledge of the used materials and of similar products. It should not reach the canalization, the ground or the waters. With an appropriate handling and application any ecological problems are not to be expected.

13 Disposal Considerations:

13.2 Contaminated packaging: Waste disposal according to official state regulations.

14 Transport Information

14.1 Transport regulations cited according to international regulations:

Land transport (ADR/RID)

UN number	1263
ADR/RID class:	3
Classification Code	F1 :
Hazard-no.:	33
Hazard label:	3
ADR/RID packing group:	II
Limited quantity:	LQ6
Description of the goods	PAINT UN 1263

Remarks

Special regulations: 163 640D 650
 Transport category: 2
 Tunnel restriction code: D1E

Inland waterways transport

UN number	1263
ADR/RID class:	3
Classification Code	F1 :
Hazard label:	3
Packing group:	II
Limited quantity:	LQ6
Description of the goods	PAINT UN 1263

Remarks

Special regulations: 163 640D 650

Marine transport

UN number	1263
IMDG code:	3
Marine pollutant	No :
Hazard label:	3
IMDG Packing group:	II
EmS	F-E, S-E
Limited quantity:	5 L
Description of the goods	PAINT UN 1263

Remarks

Special regulations: 163, 944

Air transport

UN/ID number	1263
ICAO/IATA-DGR	3
Hazard label:	3
ICAO packing group	II
Limited quantity Passenger	1L

Material Safety Data Sheet

Revision date: 11.10.10

REA-JET TKD-GN 010 Ink

Page 5 of 5

IATA-packing instructions – Passenger	305
IATA max quantity – Passenger	5L
IATA packing instructions – Cargo	307
IATA max quantity – Cargo	60L
Description of the goods	PAINT UN 1263 Passenger LQ Y305 Special regulations A72

Remarks

15 Regulatory Information

US. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III Section 302 Extremely Hazardous Substance (40 CFR 355, Appendix A)

Methyl ethyl ketone (78-93-3)
Isopropanol (67-63-0)
N-Methyl-2-Pyrrolidone (872-50-4)

Additional information DO NOT USE THIS PRODUCT FOR CLEANING SKIN AND CLOTHES!

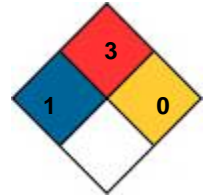
16 Other Information

Hazardous Materials Information Label (HMIS)

Health:	1
Flammability:	3
Physical Hazard:	0

NFPA Hazard Ratings

Health:	1
Flammability:	3
Reactivity	0
Unique Hazard:	Not Applicable



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