SDS

In compliance with HCS/HazCom 2012

HBK HOTTINGER BRÜEL & KJÆR

SAFETY DATA SHEET

Product: BCY01

Revision: 00 | Date: 9/15/2021 | Pages: 1 /17

1 - IDENTIFICATION

Product identifier	BCY01
Other name	RJNT-SUVA-84MS-VRDH
Recommended use of the chemical and restrictions on use	Activator
Company	Hottinger Brüel & Kjaer
Address	19 Bartlett st. Marlborough, MA 01590
Telephone number	+1.508.804.3268
Emergency telephone number	Chemtrec: 1-800-424-9300. International: 1-703-527-3887
E-mail	support@hbm.com

2 - HAZARDS IDENTIFICATION

Classification of the chemical	Flammable liquids – Category 2 Aspiration hazard – Category 1 Germ cell mutagenicity – Category 1B Carcinogenicity – category 1B Reproductive toxicity – Category 2 Hazardous to the aquatic environment – short time Acute – Category 2 Hazardous to the aquatic environment – long-term Chronic – Category 2
Signal word	DANGER
Hazard statement(s)	H225 Highly flammable liquid and vapour. H304 May be fatal if swallowed and enters airways. H340 May cause genetic defects. H350 May cause cancer. H361 Suspected of damaging fertility or the unborn child. H401 Toxic to aquatic life. H411 Toxic to aquatic life with king lasting effects.

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Product: BCY01

Symbol(s)

Precautionary statement(s)

PREVENTION

P210 Keep away from heat, hot surfaces, sparks, open flames, and other sources. No smoking.

P233 Keep container tightly closed.

P240 Ground and bond container and receiving equipment.

P241 Use explosions-proof electrical, ventilating, lighting equipment.

P242 Use non-sparking tools.

P243 Take action to prevent static discharges.

P273 Avoid release to the environment.

P280 Wear protective gloves, protective clothing, eye protection, face protection, hearing protection.

RESPONSE

P318 IF exposed or concerned, get medical advice.

P391 Collect spillage.

P301 + P316 IF SWALLOWED: Get emergency medical help immediately.

P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.

P370 + P378 In case of fire: Use water jet or fog, chemical powder, carbon dioxide (CO_2) to extinguish.

STORAGE

P405 Store locked up.

DISPOSAL

P501 Dispose of contents and container in accordance with current regulations.

Classification system adopted	Hazard Communication Standard (HCS) 29 CFR: 1910.1200 - Appendix A. Adoption of the Globally Harmonized System of Classification and Labeling of Chemicals (GHS), United Nations, 8 ed.
Other hazards which do not result in classification	The product has no other hazards.

3 – COMPOSITION / INFORMATION ON INGREDIENTS

MIXTURE

Impurities and stabilizing additives contributing to the hazard (%m):

Components	Concentration %	Number CAS	GHS classification*
Naphtha (petroleum), hydrotreated light; Low boiling point hydrogen treated naphtha	50 - 100 %	64742-49-0	H304; H340; H350; H401; H411
Cyclohexane	5 - < 10 %	110-82-7	H225; H304; H315; H336; H400; H410
N,N-dimethyl-p-toluidine	0,1 -< 1 %	99-97-8	H301; H311; H331; H351; H373; H402; H412
n-Hexane	0,1 -< 1 %	110-54-3	H225; H304; H315; H336; H361; H373; H402; H411

* Hazard statements are described in section 16.

4 - FIRST-AID MEASURES

Inhalation	Remove victim to fresh air and keep at rest in a comfortable position for breathing. Monitor respiratory function. If you feel unwell, contact a POISON CENTER or doctor. Take this SDS.
Skin contact	Wash exposed skin with enough soap and water to remove the

	material, if necessary, take a shower. Contact a POISON CENTER or doctor immediately. Take this SDS.
Eye contact	Rinse with plenty of water, keeping the eyelids open to eliminate all the product. If using contact lenses, remove them if it is easy. Continue rinsing. If necessary, contact a POISON CENTER or a doctor. Take this SDS.
Ingestion	Do not induce vomiting. Do not give anything by mouth to an unconscious person. Rinse victim's mouth with plenty of water. If vomiting occurs, tilt the patient forward or place the patient on the left side (if possible upwards) to keep the airway open and prevent aspiration. Keep the patient silent and maintain normal body temperature. Consult a POISON CENTER or doctor. Take this SDS.
Most important symptoms and effects, acute and delayed	May be fatal if swallowed and enters airways. May cause genetic defects. May cause cancer. Suspected of damaging fertility or the unborn child.
Indication of any immediate medical attention and special treatment needed	Avoid contact with the product when helping the victim. Exposure treatment should be directed towards the control of the patient's symptoms and clinical condition. In case of contact with the skin, do not rub the affected area.

5 - FIRE-FIGHTING MEASURES

Extinguishing media	Suitable: Compatible with water jet or fog, alcohol resistant foam, chemical powder, carbon dioxide (CO_2). Not suitable: Direct water jets.
Specific hazards arising from the chemical product	Extremely dangerous when exposed to excessive heat or other sources of ignition such as sparks, open flames or match and cigarette flames, welding operations, pilot lights and electric motors. May accumulate static charge by flow or agitation. Vapors of heated liquid may ignite by static discharge. Vapors may be denser than air and tend to accumulate in low or confined areas such as manholes and basements. They can

Specific extinguishing methods	travel long distances, causing the flame to recede or new fires in open and confined environments. Containers may explode if heated. Combustion of the chemical or its packaging can form irritating and toxic gases such as monoxide and carbon dioxide. If material is on fire or involved in fire: Submerge with water. Cool all affected containers with plenty of water. Approach fire against wind to avoid hazardous vapors and toxic decomposition products. Use large amounts of water in containers involved in fire. If necessary, use water spray to cool fire-exposed containers. Self-contained breathing apparatus (SCBA) operated in positive pressure mode and complete protective clothing.

6- ACCIDENTAL RELEASE MEASURES

Personal precautions	Prevent sparks or flames. Do not smoke. Do not touch damaged containers or spilled material without wearing suitable clothing. Avoid exposure to the product. Stay away from low areas, with the wind behind you. Use personal protective equipment as described in section 8.
Protective equipment	Wear PPE complete with safety glasses, protective gloves, suitable protective clothing, and closed shoes.
Emergency procedures	In case of large leaks, where exposure is large, it is recommended to use respiratory protection with a filter against vapors. Evacuate the area within a radius of at least 300 meters. If the tank or cargo is involved in the fire, isolate the area within a radius of 800 meters in all directions. Keep unauthorized persons away from the area. Stop the leak if it can be done without risk.
Environmental precautions	Prevent spilled product from reaching water courses and sewage system.
Methods and materials for	Containment techniques may include bunding, covering of

containment	drains and capping procedures.
Methods and materials for cleaning up	Use water mist or vapor suppressing foam to reduce the dispersion of the vapors. Use natural barriers or containment of spillage. Collect spilled product and place in appropriate containers. Adsorb the remaining product with dry sand, earth, vermiculite, or other inert material. Place the adsorbed material in appropriate containers and remove them to a safe place. For disposal, proceed according to Section 13 of this SDS.

7- HANDLING AND STORAGE

Precautions for safe handling	Handle in a ventilated area or with a general local ventilation / exhaust system. Avoid formation of vapors. Avoid exposure to the product. Avoid contact with incompatible materials. Ground all equipment. Use explosion-proof electrical equipment and lighting. Ground the lines and equipment used during the transfer to reduce the possibility of a fire or explosion initiated by a static spark. Use personal protective equipment as described in section 8. Wash hands and face thoroughly after handling and before eating, drinking, smoking, or going to the bathroom. Contaminated clothing should be changed and washed before reuse. Remove clothing and protective equipment contaminated before entering eating areas.
Conditions for safe storage, including any incompatibilities	Keep away from heat, sparks, open flames, and hot surfaces. - Do not smoke. Keep container tightly closed. Ground the container vessel and the receiver of the product during transfers. Only use anti-sparking tools. Avoid the accumulation of electrostatic charges. Use electrical equipment, ventilation, and lighting explosion proof. Incompatible with highly oxidising substances. Recommended packaging: similar to original packaging.

8 - EXPOSURE CONTROLS AND PERSONAL PROTECTION

Permissible concentration

Occupational exposure limit

Chemical or common name	TLV – TWA (ACGIH, 2021)	PEL – TWA (OSHA, 2019)	REL – TWA (NIOSH, 2019)
Cyclohexene	100 ppm	300 ppm	300 ppm
n-Hexane (skin)	50 ppm	50 ppm	50 ppm

Skin: Danger of cutaneous absorption.

Biological limit

ACGIH - BEI (2021):
n-Hexane:
2,5 Hexanedione in urine (end of shift): 0.5 mg/L.

Appropriate engineering controls

Promote direct mechanical ventilation and exhaust system to the outside environment. These measures help reduce exposure to product. Keep atmospheric concentrations of the chemical agent below the indicated occupational exposure limits.

Individual protection measures, such as personal protective equipment

Respiratory protection

Respiratory protection with filter against organic vapors or mist in case of exposure to the product.
Based on occupational exposure limits and inhalation hazards of the product, a risk assessment should be performed to properly define respiratory protection in view of the conditions of product use.

Hand protection

Nitrile protective gloves.

Eye protection

Safety glasses with side shields.

Skin and body protection

Suitable safety clothing and closed shoes. The material used should be waterproof. Wear anti-static footwear and clothing.

Special precautions

Not established.

9 - PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance (physical state, color, etc.)	Liquid colorless.
Odour	Not available.
Odour threshold	Not available.
pH	Not available.
Melting point/freezing point	Not available.
Boiling point, initial boiling, and boiling range	93-97 °C.
Flashpoint	-4°C.
Upper/lower flammability or explosive limits	Lower 0.84 vol %. Upper 6.7 vol %.
Vapour pressure	47 hPa (at 20°C). 189 hPa (at 50°C).
Vapour density	Not available.
Relative density	0.7 g/cm³ (at 20°C).
Solubility(ies)	Not available.
n-octanol/water partition coefficient	Not available.
Auto-ignition temperature	205°C.
Decomposition temperature	Not established.
Odour threshold	Not established.
Evaporation rate	Not available.
Flammability	Not established.

Viscosity	Not available.
Other information	Not available.

10 - STABILITY AND REACTIVITY

Reactivity and Chemical stability	Product is stable under normal conditions of temperature and pressure.
Possibility of hazardous reactions	May react dangerously in contact with incompatible materials.
Conditions to avoid	Elevated temperatures. Ignition sources, contact with incompatible materials and humidity.
Incompatible materials	Incompatible with highly oxidising substances.
Hazardous decomposition products	Decomposition of product may generate toxic gases such as CO, CO_2.

11 - TOXICOLOGICAL INFORMATION

Acute toxicity	The product is not expected to present acute oral, dermal or inhalation toxicity. Cyclohexane: LD_{50} (oral, rats):> 5,000 mg/kg. LD_{50} (dermal, rabbits): > 2,000 mg/kg. LC_{50} (inhalation, rats, 4h): > 32,880 mg/m3. N,N - dimethyl-p-toluidine: LD_{50} (oral, rats): 250 mg/kg. LD_{50} (dermal, rabbits): 300 - 2000 mg/kg. LC_{50} (inhalation, rats, aerosol, 4h): 1.4 mg/L. n-Hexane: LD_{50} (oral, rats): 16,000 mg/kg. LD_{50} (dermal, rabbits): 3,350 mg/kg. LC_{50} (inhalation, rats): 259 354 mg/m^3.

Skin irritation/corrosion	The product is not expected to cause skin irritation. Petroleum naphtha: Rabbit skin irritation test - negative results.
Eye damage/irritation	The product is not expected to cause eye irritation. Petroleum naphtha: Eye irritation test on rabbits - negative results.
Respiratory or skin sensitization	The product is not expected to cause skin sensitization. Petroleum naphtha: Skin sensitization test with guinea pigs (OECD 406) showed negative results.
Reproductive cell mutagenicity	May cause genetic defects. Petroleum naphtha: Studies show that petroleum naphtha causes mutagenicity.
Carcinogenicity	May cause cancer. N,N - dimethyl-p-toluidine: The IARC classifies the compound as group 2B - Possibly carcinogenic to humans. Petroleum naphtha: Studies show that petroleum naphtha causes cancer.
Reproductive toxicity	Suspected of damaging fertility or the unborn child. n-Hexane: A reproductive toxicity study, through inhalation of hexane in rats was carried out, and observed adverse effects on the fertility of the animals tested.
Specific target organ toxicity – single exposure	The product is not expected to cause specific target organ toxicity through single exposure.
Specific target organ toxicity – repeated exposure	The product is not expected to cause specific target organ toxicity through repeated exposure.
Aspiration hazard	May be fatal if swallowed and enters airways. Ingestion of the

product can lead to chemical pneumonitis due to aspiration into the lungs.

12 - ECOLOGICAL INFORMATION

Environmental effects, behavior, and fate of the product

Ecotoxicity	Toxic to aquatic life with king lasting effects. Cyclohexane: LC_{50} (*Pimephales promelas*, 96h): 4.35 mg/L. EC_{50} (*Daphnia magna*, 48h): 0.9 mg/L. EC_{50} (*Pseudokirchneriella subcapitata*, 72h): 4.425 mg/L. NOEC (*Pseudokirchneriella subcapitata*, 72h): 0.925 mg/L. N,N - dimethyl-p-toluidine: LC_{50} (*Pimephales promelas*, 96h): 52.8 mg/L. LC_{50} (*Pimephales promelas*, 96h): 52 mg/L. LC_{50} (*Pimephales promelas*, 96h): 46 mg/L. LC_{50} (*Daphnia magna*, 48h): 15.259 mg/L. EC_{50} (*Daphnia magna*, 48h): 23.758 mg/L. EC_{50} (*Daphnia magna*, 48h): 13.7 mg/L. EC_{50} (Green algae, 96h): 15.481 mg/L. EC_{50} (*Pseudokirchneriella subcapitata*, 72h): 24.37mg/L. Petroleum naphtha: LL_{50} (*Oncorhynchus mykiss*, 96h): 10 mg/L. LL_{50} (*Pimephales promelas*, 96h): 8.2 mg/L. LE_{50} (*Daphnia magna,* 48h): 4.5 mg/L. NOELR (*Daphnia magna*, 21 days): 2.6 mg/L. LE_{50} (*Pseudokirchnerella subcapitata*, 72h): 3.1 mg/L. NOELR (*Pseudokirchnerella subcapitata*, 72h): 0.5 mg/L.
Persistence and degradability	The product is expected to exhibit persistence and not be rapidly degraded.
Bioaccumulative potential	The product is expected to have bioaccumulative potential in aquatic organisms.
Mobility in soil	Not available.

Other adverse effects	The release of large amounts of product can cause undesirable environmental effects, such as reduced oxygen availability in aquatic environments due to the formation of an oily layer on the surface, coating, and consequent suffocation of animals.

13 - DISPOSAL CONSIDERATIONS

Description of waste residues and information on their safe handling and methods of disposal, including the disposal of any contaminated packaging	Must be disposed of as hazardous waste in compliance with local regulations. The treatment and disposal should be evaluated for each specific product. Keep product residues in their original containers and properly closed. Disposal should be in accordance with the regulations for the product. Do not reuse empty containers. These may contain product residues and should be kept closed and sent for appropriate disposal as established for the product.

14 - TRANSPORT INFORMATION

International regulations

Land	UN – “United Nations” Recommendations on the TRANSPORT OF DANGEROUS GOODS. Model Regulations DOT - U.S. Department of Transportation
UN number	1206
UN proper shipping name	HEPTANES
Transport hazard class(es)	3
Subsidiary risk	NA
Packing group	II
Sea	IMO – International Maritime Organization International Maritime Dangerous Goods Code (IMDG Code)
UN number	1206

UN proper shipping name	HEPTANES
Transport hazard class(es)	3
Subsidiary risk	NA
Packing group	II
Environmental hazards	Product is considered a marine pollutant..
EmS	F-E, S-D
Air	IATA – International Air Transport Association Dangerous Goods Regulation (DGR)
UN number	1206
UN proper shipping name	HEPTANES
Transport hazard class(es)	3
Subsidiary risk	NA
Packing group	II
Transport in bulk according to MARPOL 73/78, Annex II, and the IBC Code	Consult regulations: - International Maritime Organization. MARPOL: Articles, protocols, annexes, unified interpretations of the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto, consolidated edition. IMO, London, 2006. - International Maritime Organization. IBC code: International code for the construction and equipment of shipping carrying dangerous chemicals in bulk: With Standards and guidelines relevant to the code. IMO, London, 2007.
Special precautions	There is no need of special precautions.

15 - REGULATORY INFORMATION

Safety, health, and environmental regulations/legislation specific for the substance or mixture	International Labor Organization C170 Chemicals Convention, from June 25th, 1990: Occupational Safety and Health – Toxic Substances and Agents. Hazard Communication Standard (HCS) 29 CFR: 1910.1200 - Appendix A, B, C, D, E, F.

GLOBALLY HARMONIZED SYSTEM OF CLASSIFICATION AND LABELLING OF CHEMICALS (GHS). 8. rev. ed.
U.S. Federal Regulations: United States inventory (TSCA): Naphtha petroleum is listed. Cyclohexane is listed. N,N-dimethyl-p-toluidine is listed. N-Hexane is listed.
California Proposition 65: N,N-dimethyl-p-toluidine is listed. N-Hexane is listed.

16 - OTHER INFORMATION

This SDS was prepared based on current knowledge about the proper product handling and under normal conditions of use, in accordance with the application specified on the packaging. Any other use of the product involving their combination with other materials, and use various forms of those indicated, are the responsibility of the user. Warns that the handling of any chemical substance requires the prior knowledge of its hazards for the user. In the workplace it is for the user company's product promotes training of its collaborators about the possible risks arising from exposure to the chemical.

SDS elaborated in September 2021.

Hazard statements described in section 3:

H225 Highly flammable liquid and vapour.

H301 Toxic if swallowed.

H304 May be fatal if swallowed and enters airways.

H311 Toxic in contact with skin.

H315 Causes skin irritation.

H331 toxic if inhaled.

H336 May cause drowsiness or dizziness.

H340 May cause genetic defects.

H350 May cause cancer.

H351 Suspected of causing cancer.

H361 May damage fertility or the unborn child.

H373 May cause damage to upper respiratory tract and blood through prolonged or repeated exposure.

H400 Very toxic to aquatic life.

H401 Toxic to aquatic life.

H402 Harmful to aquatic life.

H410 Very toxic to aquatic life with lasting effects.

H411 Toxic to aquatic life with lasting effects.

H412 Harmful to aquatic life with lasting effects.

Abbreviations:

ACGIH – American Conference of Governmental Industrial Hygienists

BCF – Bioconcentration Factor

CAS – Chemical Abstracts Service

LE_{50} – Efective concentration 50%

LC_{50} – Lethal Concentration 50%

LD_{50} – Lethal Dose 50%

NIOSH – National Institute of Occupational Safety and Health

OSHA – Occupational Safety & Health Administration

PEL – Permissible Exposure Limit

REL – Recommended Exposure Limit

STEL – Short Term Exposure Limit

TLV – Threshold Limit Value

TWA – Time Weighted Average

Bibliographic references:

ACGIH. AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIALS HYGIENISTS. TLVs® and BEIs®: Based on the Documentation of the Threshold Limit Values (TLVs®) for Chemical Substances and Physical Agents & Biological Exposure Indices (BEIs®). Cincinnati-USA, 2021.

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EPA. United States Environmental protection Agency. Comptox. Available in: < https://comptox.epa.gov>. Access in: Sep. 2021.

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IARC. INTERNATIONAL AGENCY FOR RESEARCH ON CANCER. Available in: <http:/monographs.iarc.fr/ENG/Classication/index.php>. Access in: Sep. 2021.

NIOSH. NATIONAL INSTITUTE OF OCCUPATIONAL AND SAFETY. International Chemical Safety Cards. Available in: <http:/www.cdc.gov/niosh/>. Access in: Sep. 2021.

NJ. STATE OF NEW JERSEY - Department of Health. Available in: <http:/nj.gov/health/eoh/rtkweb/odispubr.shtml>. Access in: Sep. 2021.

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