

 **KUMIAI CHEMICAL INDUSTRY CO., LTD.**4-26, IKENOHATA 1-CHOME, TAITOH-KU
TOKYO 110-8782, JAPAN**SAFETY DATA SHEET**

according to Regulation (EU) No 453/2010 & Regulation (EC) No 1272/2008 (CLP)

VALBON

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier

Product name: VALBON
Synonyms: KIF-230/MZ 17.5/700 WG
KIF-230/Mancozeb 17.5/700 WG

1.2 Relevant identified uses of the substance or mixture and uses advised against

Fungicide for agricultural use

1.3 Details of the supplier of the safety data sheet

Manufacturer and address: Kumiai Chemical Industry Co., Ltd.
Planning & Coordination Section
Overseas Marketing Department
1-4-26, Ikenohata, Taitoh-ku, Tokyo 110-8782,
Japan

Person responsible for SDS: Sadayuki Matsubuchi
Telephone: +81 (0)3 3822 5065
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E-mail: soumu@kumiai-chem.co.jp

Entity in EU: K-I Chemical Europe SA/NV
Avenue Louise 326, box 3
B-1050 Brussels
Belgium

Person responsible for SDS: Osamu Watanabe
Telephone in EU: +32 (0)2 761 04 30
Telefax in EU: +32 (0)2 763 26 82
E-mail: o-watanabe@kicheurope.com

1.4 Emergency telephone number (not available outside office hours)

Emergency telephone No. in Japan: +81 (0)3 3822 5065
Emergency telephone No in EU: +32 (0)2 761 04 30

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Regulation (EC) No 1272/2008 [CLP]	
Hazard classes/Hazard categories	Hazard statements
Carcinogen category 2	H351
Skin sensitisation category 1	H317
Reproductive toxicity category 2	H361d
Aquatic Acute category 1	H400

For complete wording of Hazard statements and precautionary statements, see section 16.

Adverse physicochemical effects: None

Adverse human health effects: May cause an allergic skin reaction.
Suspected of causing cancer.
Suspected of damaging the unborn child.

Adverse environmental effects: Very toxic to aquatic life.

2.2 Label elements

Hazard pictograms:



Signal word: Warning
Hazard statements: H317, H351, H361d, H400
Precautionary statements: P103+P101, P201, P273, P280, P308+P313, P501
Supplemental information: EUH401

2.3 Other hazards

The mixture does not fulfill the persistence criterion (-P) and the bioaccumulation criterion (-B) but fulfils the toxicity criterion (-T) in accordance with Annex XIII of REACH.

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.2 Mixtures

Chemical name	Common name	EINECS No	CAS-No	Amount (%)	Classification according to Regulation (EC) No 1272/2008 [CLP]	
					Hazard classes and category codes	Hazard statements
Manganese ethylenebis (dithiocarbamate) (polymeric) complex with zinc salt	Mancozeb	006-076-00-1	8018-01-7	70.00	Repr. 2, Skin Sens. 1, Aquatic Acute 1	H361d H317 H400
Isopropyl [(S)-1-((R)-1-(6-fluoro-1,3-benzothiazol-2-yl)ethyl)carbamoyl]-2-methylpropyl]carbamate	Benthiavalcarb-isopropyl (provisionally approved ISO name: Benthiavalcarb)	Not established	177406-68-7	1.75	Carc. 2, Skin Sens. 1	H351 H317

For complete wording of Hazard statements, see section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

- Inhalation** Remove the victim from contaminated area and give fresh air and rest. If symptoms occur, seek medical attention and show the label or packaging.
- Skin contact** Rinse with plenty of water or shower for 15 minutes. Remove contaminated clothes and shoes. If symptoms occur, seek medical attention and show the label or packaging.
- Eye contact** Rinse with plenty of water for 10 minutes (remove contact lenses if easily possible). Do not make pour the water towards the not affected eye. Seek medical attention and show the label or packaging.
- Ingestion** Seek immediate medical attention and show the label or packaging. Rinse mouth. Contact the antipoison centre to know if the absorption of activated charcoal in water is indicated.

4.2 Most important symptoms and effects, both acute and delayed

No cases of poisoning have been reported to date. Therefore the symptoms of poisoning have not been described.

4.3 Indication of any immediate medical attention and special treatment needed

Information for doctors: Give symptomatic treatment. Contact the antipoison centre for the later treatment in a hospital environment.

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media: For small fires, use foam, dry chemical powder, or carbon dioxide. Use water only in case of important fire. Unsuitable extinguishing media: High volume water jet should not be used.

5.2 Special hazards arising from the substance or mixture

Thermal decomposition gives flammable and toxic products: Carbon disulphide, hydrogen sulphide, oxides of sulphur, nitrogen oxides, carbon oxides.

5.3 Advice for firefighters

Fire fighters should avoid downwind operation. Wear full protective suit. In case of major fires, wear self-contained breathing apparatus.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Ventilate the area. Wear appropriate protective gears to avoid breathing vapour and contact with skin, eyes or clothing when working on a spill (see Section 8).

6.2 Environmental precautions

Do not allow to enter drainage system, surface or ground water. If the product enters water courses or sewers or contaminates soil and plants, inform the competent Authority.

6.3 Methods and material for containment and cleaning up

Collect by sweeping or suction into hermetically sealed containers. Clean the accident area with water.

6.4 Reference to other sections

See Sections 8 and 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

- P102: KEEP OUT OF REACH OF CHILDREN
- Provide appropriate exhaust and ventilation at machinery and at places where dust can be generated.
- Do not generate dust by mechanical effects. Use no hooks.
- Avoid contact with eyes and skin. Wear protective clothing and suitable gloves (see Section 8).
- P270: Do not eat, drink or smoke when using this product.
- Wash face and hands before eating, drinking or smoking.

7.2 Conditions for safe storage, including any incompatibilities

- Keep only in the original container.
- Store in tightly closed containers in a cool, dry and well-ventilated space, away from direct sunlight.

- P405: Store locked up.
- Keep away from heat, steam pipe or combustible materials.
- Keep away from food, drink and animal feeding stuffs.

7.3 Specific end use(s)

Refer to the label.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Mean exposure limit value of dusts = 10 mg/m³

8.2 Exposure controls**8.2.1 Appropriate engineering controls**

- Use sealed equipment and apparatus as much as possible.
- Make available local exhaust ventilation.
- Make available washing face equipments.

8.2.2 Individual protection measures, such as personal protective equipment**(a) Eye protection**

Wear safety goggles

(b) Skin protection

- (i) Hand protection: Wear chemical resistant gloves.
- (ii) Others: Wear standard protective garment (coverall) and boots as appropriate.

(c) Respiratory protection

Wear chemical cartridge respirator with an organic vapour cartridge, airline respirator, positive pressure self-contained breathing apparatus as appropriate. Personal protective equipment (PPE) should be to European (EN) standards.

8.2.3 Environmental exposure controls

Prevent the product from entering drainage system, surface or ground water.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance:	Olive to yellowish brown, free-flowing microgranules
Odour:	Wood-like smelling
Odour threshold:	Not available (data lacking)
pH:	7.2 (as a 1% aqueous suspension) [method CIPAC MT 75]
Melting point/freezing point:	Not applicable (WG formulation)
Initial boiling point:	Not applicable (WG formulation)
Flash point:	Not applicable (not a liquid)
Evaporation rate:	Not relevant
Flammability (solid, gas):	Not highly flammable [method EEC A.10]
Upper/lower flammability or explosive limits:	Not relevant
Vapour pressure:	Not applicable (WG formulation)
Vapour density:	Not relevant
Relative density:	Not applicable (not a liquid)
Solubility(ies):	Not applicable (WG formulation)
Partition coefficient: n-octanol/water:	Not applicable (WG formulation)

Auto-ignition temperature:	159°C [method EEC A.16]
Decomposition temperature:	Not applicable (WG formulation)
Viscosity:	Not applicable (not a liquid)
Explosive properties:	Non explosive [method EEC A.14]
Oxidising properties:	Non oxidizing [method EEC A.17]

9.2 Other information

Bulk density:	0.620 kg/L [method CIPAC MT 169]
Tap density:	0.680 kg/L [method CIPAC MT 169]

10. STABILITY AND REACTIVITY**10.1 Reactivity**

No reactivity with packaging material after two-year storage at ambient temperature and after accelerated storage at 54°C for 14 days.

10.2 Chemical stability

Stable at room temperature.

10.3 Possibility of hazardous reactions

Information not available.

10.4 Conditions to avoid

Avoid elevated temperatures, moisture and oxygen, which break down the product and induce flammable and toxic gas.

10.5 Incompatible materials

Avoid strong oxidizing agents, strong acids, quaternary ammonium salts, sequestering agents.

10.6 Hazardous decomposition products

Thermal decomposition gives flammable and toxic products: Carbon disulphide, hydrogen sulphide, oxides of sulphur, nitrogen oxides, carbon oxides.

11. TOXICOLOGICAL INFORMATION**11.1 Information on toxicological effects**

(a) Acute toxicity:

	Effect dose	Species	Method	Remark
Acute oral toxicity	LD ₅₀ >2000 mg/kg	Rat	US EPA Guideline OPPTS 870.110, OECD Guideline 401	Based on available data, the classification criteria are not met.
Acute dermal toxicity	LD ₅₀ > 2000 mg/kg	Rat	US EPA OPPTS Guidelines 870.1200, OECD Guideline 402	Based on available data, the classification criteria are not met.
Acute inhalation toxicity	LC ₅₀ > 5.15 mg/L (4h)	Rat	US EPA OPPTS Guidelines 870.1300, OECD Guideline 403	Based on available data, the classification criteria are not met.

(b) Skin corrosion/irritation:

	Exposure time	Species	Method	Evaluation	Remark
Skin irritation	4h	Rabbit	US EPA OPPTS Guidelines 870.2500, OECD Guideline 404	Non skin-irritant; non skin-corrosive	Based on available data, the classification criteria are not met.

(c) Serious eye damage/irritation:

	Exposure time	Species	Method	Evaluation	Remark
Irritation to eyes	-	Rabbit	US EPA OPPTS Guidelines 870.2400, OECD Guideline 405	Mild eye irritant	Based on available data, the classification criteria are not met.

(d) Respiratory or skin sensitisation:

Species	Evaluation	Method	Remark
Guinea-pig	Skin sensitiser	Magnusson and Kligman method	Skin sens. 1; H317

(e) Germ cell mutagenicity:

Benthiavalicarb-isopropyl: no mutagenic potential (*in vivo* tests)

Mancozeb: no mutagenic potential (in mammalian systems)

(f) Carcinogenicity:

	Exposure time	Species	Specific effects	Remark
Benthiavalicarb-isopropyl	2 years	Rat	Uterine adenocarcinoma	Carc. 2; H351
	2 years	Mouse	Hepatocellular blastoma and carcinoma, thyroid follicular cell adenoma	
Mancozeb	2 years	Rat	Thyroid adenomas and carcinomas at high doses	Based on available data, the classification criteria are not met.
	18 months	Mouse	No carcinogenic effects	

(g) Reproductive toxicity:

Benthiavalicarb-isopropyl: no effect on reproduction function; no developmental toxicity

Mancozeb: Malformations at high doses in rats; embryo- /fetotoxicity (delayed ossification, abortions) at lower maternally toxic doses in rats and rabbits. Repr. 2; H361d

(h) STOT-single exposure:

Benthiavalicarb-isopropyl: The classification is not possible because the data are insufficient.

Mancozeb: The classification is not possible because the data are insufficient.

(i) STOT-repeated exposure

Benthiavalicarb-isopropyl: The classification is not possible because the data are not conclusive.

Mancozeb: The classification is not possible because the data are lacking.

(j) Aspiration hazard:

Benthiavalicarb-isopropyl: The classification is not possible because the data are lacking.

Mancozeb: The classification is not possible because the data are lacking.

Specific symptoms in animal studies:

In case of ingestion: After gavage to rats, no clinical signs of toxicity were observed throughout the 14-day observation period.

In case of skin contact: After intradermal injection in the guinea-pig, erythema, eschar and desquamation of the epidermis were observed.

In case of inhalation: After 4-hour inhalation exposure of rats, there were no clinical signs attributed to the test article.

In case of eye contact: After instillation in eyes of rabbits, a single instillation elicited conjunctival irritation, which did not exceed a diffuse crimson colour in the sentinel rabbit, injection of the blood vasculature in the main study rabbits, swelling with partial eversion of the eyelids and some slight discharge were seen in all animals. All irritation reactions had resolved by four or five days after dosing.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

	Effect dose	Exposure time	Species	Method
Acute fish toxicity	LC ₅₀ < 1 mg/L	96 h	<i>Oncorhynchus mykiss</i>	OECD Guideline 203
Acute daphnia toxicity	EC ₅₀ < 1 mg/L	48 h	<i>Daphnia magna</i>	OECD Guideline 202
Acute algae toxicity	E ₆ C ₅₀ <1 mg/L E _r C ₅₀ >1 mg/L	72 h	<i>Selenastrum capricornutum</i>	OECD Guideline 201
Acute bird oral toxicity (Benthiavalicarb-isopropyl)	LD ₅₀ > 2000 mg/kg		<i>Colinus virginianus</i> / <i>Anas platyrhynchos</i>	US EPA FIFRA § 71-1
Acute bird oral toxicity (Mancozeb)	LD ₅₀ > 2000 mg/kg		Japanese quail	Not available
Acute honey bee oral toxicity	LD ₅₀ >100 µg a.s./bee		<i>Apis mellifera</i>	OECD Guideline 213
Acute honey bee contact toxicity	LD ₅₀ >100 µg a.s./bee		<i>Apis mellifera</i>	OECD Guideline 214
Acute earthworm toxicity	LC ₅₀ = 910.7 mg /kg	14-day	<i>Eisenia foetida</i>	OECD Guideline 207
Chronic earthworm toxicity	NOEC ≥ 20 kg product/ha	28-day	<i>Eisenia foetida</i>	ISO Guideline: 11268-2

Active sludge respiration inhibition: EC20, EC50, EC80 > 100 mg/l (for Benthiavalicarb-isopropyl)

12.2 Persistence and degradability

(a) Benthiavalicarb-isopropyl:

Half-time	Method	Evaluation
Soil	Laboratory study, aerobic, 20°C	DT ₅₀ = 11-19 days
Air	Atkinson method of calculation	DT ₅₀ = 2.334 hours
Water/sediment	Laboratory study	DT ₅₀ = 15-18 days

Biodegradability:

Degradation rate (%)	Time (d)	Method	Evaluation
2-3% of the theoretical max value CO ₂	28 days	carbon dioxide evolution	Not readily biodegradable

(b) Mancozeb:

Half-time	Method	Evaluation
Soil	Laboratory study, aerobic, 20°C	DT ₅₀ = 1-3 hours
Water	Laboratory study, 20°C	DT ₅₀ = 0.6-14.4 hours

Biodegradability: Not readily biodegradable

12.3 Bioaccumulative potential

(a) Benthiavalicarb-isopropyl: n-octanol /water Partition coefficient (logPow)

Value	pH	Temperature	Evaluation
2.56 (range 2.28 - 2.86)	unadjusted	20-25°C	Low bioaccumulative potential

(b) Mancozeb: n-octanol /water Partition coefficient (logPow)

Value	pH	Temperature	Evaluation
1.33	Not available	Non available	Low bioaccumulative potential

12.4 Mobility in soil

(a) Benthiavalicarb-isopropyl:

Known or predicted distribution to environmental compartments: Soil, surface water and sediment

Surface tension:

Value	Temperature	Concentration
63.1 mN/m	22 °C	90% saturated solution

Adsorption/desorption: Adsorption values: K_{foc} 121-258
Desorption values: K_{foc} 167.5 – 390.2

(b) Mancozeb :

Known or predicted distribution to environmental compartments: Soil, surface water

Adsorption/desorption: Adsorption values: K_{oc} 363-2334
Desorption values: K_d 7.26 – 11.67

12.5 Results of PBT and vPvB assessment

Not relevant.

12.6 Other adverse effects

No specific adverse effects known.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

The appropriate method of waste treatment is the controlled incineration in an approved commercial incinerator. Dispose of product containers and waste containers and residues according to the local health and environmental regulations.

14. TRANSPORT INFORMATION

14.1 UN number

ADR (2009), RID (2009), ADN (2009),
IMDG (2008), ICAO/IATA (2008):

UN No. 3077

14.2 UN proper shipping name

ADR (2009), RID (2009), ADN (2009),
IMDG (2008), ICAO/IATA (2008):

ENVIRONMENTALLY HAZARDOUS
SUBSTANCE, SOLID, N.O.S. (MANCOZEB)**14.3 Transport hazard class(es)**

ADR (2009), RID (2009), ADN (2009),
IMDG (2008), ICAO/IATA (2008):

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**14.4 Packing group**

ADR (2009), RID (2009), ADN (2009),
IMDG (2008), ICAO/IATA (2008):

III

14.5 Environmental hazards

ADR (2009), RID (2009), ADN (2009),
IMDG (2008), ICAO/IATA (2008):
IMDG (2008):

Environmentally hazardous mixture
Marine pollutant (P)**14.6 Special precautions for user**

No special precautions.

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not relevant.

15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Benthiavalicarb-isopropyl and Mancozeb are listed in Annex I of the Council directive 91/414/EEC.

Mancozeb has a harmonized classification and labelling listed in the Regulation (EC) No 790/2009.

15.2 Chemical safety assessment

Exempted from REACH Registration.

16. OTHER INFORMATION

Original dated: May 01, 2013. Revised on June 05, 2015 for the following reasons:

- Sections 2.1, 2.2 and 3.1 were updated based on the Harmonized classification of mancozeb and on the 4th ATP to Regulation (EC) No. 1272/2008.
- Classification according to Directives 67/548/EEC and 1999/45/EEC are no longer required and were therefore removed.

Abbreviations explanations: WG, water dispersible granule; PBT, persistent, bioaccumulative and toxic; vPvB, very persistent and very bioaccumulative.

Source for data: Data concerning Mancozeb come from the review report SANCO/4058/2001 - rev. 4.4 - July 2009. Data concerning benthiavalicarb-isopropyl come from the EFSA Scientific report (2007) 107, 1-81.

Hazard statements explanations: H317, may cause an allergic skin reaction; H351, suspected of causing cancer; H361d, suspected of damaging the unborn child; H400, very toxic to aquatic life.

Precautionary statements explanations: P103+P101, read label before use and if medical advice is needed, have product container or label at hand; P201, obtain special instructions before use; P273, avoid release to the environment; P280, wear protective gloves/protective clothing/eye protection/face protection.; P308+P313, if exposed or concerned: Get medical advice/attention; P501, dispose of contents/container in accordance with local regulation.

Supplemental information explanations: EUH401, to avoid risks to human health and the environment, comply with the instructions for use.

To the best of our knowledge, the information contained herein is accurate. However, we cannot assume any liability whatsoever for the accuracy or completeness of the information contained herein.