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Safety data sheet

BASF Safety data sheet according to Regulation (EC) No. 1907/2006 as amended from time to time.
Date / Revised: 31.07.2025 Version: 2.0
Date / Previous version: 12.02.2018 Previous version: 1.0
Product: **PVP-Iodine 30/06**

(ID no. 30034963/SDS_GEN_UA/EN)
Date of print 11.10.2025

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

PVP-Iodine 30/06

Chemical name: 2-Pyrrolidinone, 1-ethenyl-, homopolymer, compd. with iodine
CAS Number: 25655-41-8

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

Relevant identified uses: Pharmaceutical agent

1.3. Details of the supplier of the safety data sheet

Company:
«BASF T.O.V.» LLC
139, Velyka Vasylkivska str
Kyiv
UKRAINE
03150

Telephone: +38 044 591 55 95 (96)
E-mail address: basf.ukraine@basf.com

1.4. Emergency telephone number

Telephone: +49 180 22 73 11 20
0 800 30 72 72 (valid from Ukraine only !!)
Telefax number: +38 044 591 55 97

SECTION 2: Hazards Identification

2.1. Classification of the substance or mixture

According to Regulation (EC) No 1272/2008 [CLP]

STOT RE 2	H373 May cause damage to organs (Thyroid gland) through prolonged or repeated exposure.

Aquatic Chronic 2	H411 Toxic to aquatic life with long lasting effects.
Eye Dam. 1	H318 Causes serious eye damage.
Skin Irrit. 2	H315 Causes skin irritation.

For the classifications not written out in full in this section the full text can be found in section 16.

2.2. Label elements

According to Regulation (EC) No 1272/2008 [CLP]

Pictogram:

Signal Word:

Danger

Hazard Statement:

H318	Causes serious eye damage.
H315	Causes skin irritation.
H373	May cause damage to organs (Thyroid gland) through prolonged or repeated exposure.
H411	Toxic to aquatic life with long lasting effects.

Precautionary Statements (Prevention):

P280	Wear protective gloves and eye protection or face protection.
P273	Avoid release to the environment.
P260	Do not breathe dust.

Precautionary Statements (Response):

P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a POISON CENTER or physician.

Precautionary Statements (Disposal):

P501	Dispose of contents and container to hazardous or special waste collection point.

2.3. Other hazards

According to Regulation (EC) No 1272/2008 [CLP]

The product is under certain conditions capable of dust explosion.

SECTION 3: Composition/Information on Ingredients

3.1. Substances

Chemical nature

2-Pyrrolidinone, 1-ethenyl-, homopolymer, compd. with iodine	Eye Dam./Irrit. 1

CAS Number: 25655-41-8	STOT RE (Thyroid gland) 2 Skin Corr./Irrit. 2 Aquatic Chronic 2 H318, H315, H373, H411

Regulatory relevant ingredients

2-Pyrrolidinone, 1-ethenyl-, homopolymer, compd. with iodine

Content (W/W): >= 75 % - <= 100 %	Eye Dam./Irrit. 1 STOT RE (Thyroid gland) 2
CAS Number: 25655-41-8	Skin Corr./Irrit. 2 Aquatic Chronic 2 H318, H315, H373, H411

Formic acid

Content (W/W): > 0 % - < 1 %	Flam. Liq. 3
CAS Number: 64-18-6	Acute Tox. 3 (Inhalation - vapour)
EC-Number: 200-579-1	Acute Tox. 4 (oral)
INDEX-Number: 607-001-00-0	Skin Corr. 1A Eye Dam. 1
Substance with EU occupational exposure limit	H226, H314, H331, H302 EUH071
	Specific concentration limit: Skin Irrit. 2: 2 - < 10 % Eye Irrit. 2: 2 - < 10 % Skin Corr. 1A: >= 90 % Skin Corr. 1B: 10 - < 90 %

For the classifications not written out in full in this section, including the hazard classes and the hazard statements, the full text is listed in section 16.

3.2. Mixtures

Not applicable

SECTION 4: First-Aid Measures

4.1. Description of first aid measures

Remove contaminated clothing.

If inhaled:
Keep patient calm, remove to fresh air, seek medical attention. Immediately administer a corticosteroid from a controlled/metered dose inhaler.

On skin contact:
Immediately wash thoroughly with plenty of water, apply sterile dressings, consult a skin specialist.

On contact with eyes:

Immediately wash affected eyes for at least 15 minutes under running water with eyelids held open, consult an eye specialist.

On ingestion:
Immediately rinse mouth and then drink 200-300 ml of water, seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms: Information, i.e. additional information on symptoms and effects may be included in the GHS labeling phrases available in Section 2 and in the Toxicological assessments available in Section 11.

4.3. Indication of any immediate medical attention and special treatment needed

Treatment: Treat according to symptoms (decontamination, vital functions), no known specific antidote.

SECTION 5: Fire-Fighting Measures

5.1. Extinguishing media

Suitable extinguishing media:
water spray, carbon dioxide, dry powder, Dry sand, foam

Unsuitable extinguishing media for safety reasons:
water jet

5.2. Special hazards arising from the substance or mixture

Endangering substances: hydrogen cyanide, Iodine, Carbon dioxide, nitrogen oxides
Advice: The substances/groups of substances mentioned can be released in case of fire. Dust explosion hazard.

5.3. Advice for fire-fighters

Special protective equipment:
Wear self-contained breathing apparatus and chemical-protective clothing.

Further information:
Collect contaminated extinguishing water separately, do not allow to reach sewage or effluent systems. Dispose of fire debris and contaminated extinguishing water in accordance with official regulations.

SECTION 6: Accidental Release Measures

Avoid dispersal of dust in the air (e.g. by clearing dusty surfaces with compressed air). Avoid the formation and build-up of dust - danger of dust explosion. Dust in sufficient concentration can result in an explosive mixture in air. Handle to minimize dusting and eliminate open flame and other sources of ignition.

6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective clothing. Information regarding personal protective measures, see section 8. Avoid dust formation. Ensure adequate ventilation. Do not breathe dust. Avoid contact with the skin, eyes and clothing.

6.2. Environmental precautions

Do not discharge into drains/surface waters/groundwater. Inform authorities in the event of product spillage to water courses or sewage systems.

6.3. Methods and material for containment and cleaning up

For small amounts: Contain with dust binding material and dispose of.
For large amounts: Sweep/shovel up.
Dispose of absorbed material in accordance with regulations. Avoid raising dust. Cleaning operations should be carried out only while wearing breathing apparatus.

6.4. Reference to other sections

Information regarding exposure controls/personal protection and disposal considerations can be found in section 8 and 13.

SECTION 7: Handling and Storage

7.1. Precautions for safe handling

Avoid dust formation. Ensure thorough ventilation of stores and work areas. Wear suitable protective clothing and eye/face protection. Avoid contact with the skin, eyes and clothing. Keep container tightly sealed.

Protection against fire and explosion:
The product is capable of dust explosion. Avoid dust formation. Prevent electrostatic charge - sources of ignition should be kept well clear - fire extinguishers should be kept handy. Use explosion-proof apparatus and fittings.

Dust explosion class: Dust explosion class 1 (Kst-value >0 up to 200 bar m s-1).

7.2. Conditions for safe storage, including any incompatibilities

Further information on storage conditions: Keep container tightly closed and dry; store in a cool place.

7.3. Specific end use(s)

For the relevant identified use(s) listed in Section 1 the advice mentioned in this section 7 is to be observed.

SECTION 8: Exposure Controls/Personal Protection

8.1. Control parameters

Components with occupational exposure limits

No substance specific occupational exposure limits known.

8.2. Exposure controls

Personal protective equipment

Respiratory protection:
Suitable respiratory protection for lower concentrations or short-term effect: Particle filter with low efficiency for solid particles (e.g. EN 143 or 149, Type P1or FFP1)

Hand protection:
Suitable chemical resistant safety gloves (EN ISO 374-1) also with prolonged, direct contact (Recommended: Protective index 6, corresponding > 480 minutes of permeation time according to EN ISO 374-1): E.g. nitrile rubber (0.4 mm), chloroprene rubber (0.5 mm), butyl rubber (0.7 mm) etc.
Supplementary note: The specifications are based on tests, literature data and information of glove manufacturers or are derived from similar substances by analogy. Due to many conditions (e.g. temperature) it must be considered, that the practical usage of a chemical-protective glove in practice may be much shorter than the permeation time determined through testing.

Eye protection:
Tightly fitting safety goggles (splash goggles) (e.g. EN 166)

Body protection:
Body protection must be chosen depending on activity and possible exposure, e.g. apron, protecting boots, chemical-protection suit (according to EN 14605 in case of splashes or EN ISO 13982 in case of dust).

General safety and hygiene measures

Handle in accordance with good industrial hygiene and safety practice. Wearing of closed work clothing is required additionally to the stated personal protection equipment. Do not breathe dust. Avoid contact with the skin, eyes and clothing. No eating, drinking, smoking or tobacco use at the place of work. Hands and/or face should be washed before breaks and at the end of the shift. Store work clothing separately.

SECTION 9: Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

State of matter:	solid	
Form:	amorphous powder	
Colour:	brown	
Odour:	almost odourless	
Melting point:	> 180 °C slow decomposition	(OECD Guideline 102)

Boiling point:	(1.013 hPa) The substance / product decomposes therefore not determined.	
Flammability:	not highly flammable	(VDI 2263, sheet 1, 1.2 (May 1990))
Lower explosion limit:	For solids not relevant for classification and labelling.	
Upper explosion limit:	For solids not relevant for classification and labelling.	
Flash point:	not applicable, the product is a solid	
Thermal decomposition:	> 180 °C, 20 J/g	
pH value:	1,8 (approx. 101,5 g/kg, 20 °C)	(pH Meter)
Viscosity, dynamic:	not applicable, the product is a solid	
Solubility in water:	approx. 700 g/l (20 °C)	(internal method)
Solubility (qualitative) solvent(s):	alcohols, ethanol soluble	
Partitioning coefficient n-octanol/water (log Kow):	< -3,1 (23 °C)	(internal method)
Vapour pressure:	< 0,1 hPa (approx. 20 °C)	
Relative density:	1,365 (20 °C)	(OECD Guideline 109)
Relative vapour density (air):	not relevant	

Particle characteristics

Particle size distribution:	typically > 100 µm	(D50, Volumetric Distribution, ISO 13320-1)

9.2. Other information

Information with regard to physical hazard classes

Explosives

Explosion hazard:	Product is not explosive, however a dust explosion could result from an air / dust mixture.

Oxidizing properties

Fire promoting properties: not fire-propagating

Pyrophoric properties

Self-ignition temperature:	Test type: Spontaneous self-ignition at room-temperature.

Based on its structural properties the product is not classified as self-igniting.

Self-heating substances and mixtures

Self heating ability:	It is not a substance capable of spontaneous heating according to UN transport regulations class 4.2.	(VDI 2263, sheet 1, 1.4.1 (May 1990))

Substances and mixtures, which emit flammable gases in contact with water

Formation of flammable gases:
Study scientifically not justified.

Corrosion to metals

In the presence of water or moisture metal corrosion cannot be excluded.

Other safety characteristics

Minimum ignition energy:
The product is capable of dust explosion.
Bulk density: 450 kg/m3
Evaporation rate:
The product is a non-volatile solid.

SECTION 10: Stability and Reactivity

10.1. Reactivity

No hazardous reactions if stored and handled as prescribed/indicated.

Corrosion to metals:	In the presence of water or moisture metal corrosion cannot be excluded.	
Formation of flammable gases:	Remarks:	Study scientifically not justified.

10.2. Chemical stability

The product is stable if stored and handled as prescribed/indicated.

10.3. Possibility of hazardous reactions

Dust explosion hazard.

10.4. Conditions to avoid

Avoid dust formation. Avoid electro-static charge. Avoid all sources of ignition: heat, sparks, open flame.

10.5. Incompatible materials

Substances to avoid:
reducing agents, metal

10.6. Hazardous decomposition products

Hazardous decomposition products:
No hazardous decomposition products if stored and handled as prescribed/indicated.

SECTION 11: Toxicological Information

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity

Assessment of acute toxicity:
Virtually nontoxic after a single ingestion. Virtually nontoxic after a single skin contact.

Experimental/calculated data:

LD50 rat (oral): > 4.640 mg/kg
LD50 rat (dermal): > 2.500 mg/kg
No mortality was observed.

Irritation

Assessment of irritating effects:
Irritating to skin. Risk of serious damage to eyes.

Experimental/calculated data:

Skin corrosion/irritation
rabbit: Irritant. (OECD Guideline 404)

Serious eye damage/irritation
rabbit: irreversible damage (OECD Guideline 405)

Respiratory/Skin sensitization

Assessment of sensitization:
Skin sensitizing effects were not observed in animal studies.

Experimental/calculated data:
Guinea pig maximization test guinea pig: Non-sensitizing. (OECD Guideline 406)

Germ cell mutagenicity

Assessment of mutagenicity:
No mutagenic effect was found in various tests with bacteria and mammals.

Carcinogenicity

Assessment of carcinogenicity:
No data available.

Reproductive toxicity

Assessment of reproduction toxicity:
No data available.

Developmental toxicity

Assessment of teratogenicity:

In animal studies the substance did not cause malformations.

Specific target organ toxicity (single exposure)

Assessment of STOT single:

Based on the available information there is no specific target organ toxicity to be expected after a single exposure.

Repeated dose toxicity and Specific target organ toxicity (repeated exposure)

Assessment of repeated dose toxicity:

Danger of serious damage to health by prolonged exposure. Damages the thyroid.

Aspiration hazard

not applicable

Interactive effects

No data available.

11.2. Information on other hazards

SECTION 12: Ecological Information

12.1. Toxicity

Assessment of aquatic toxicity:

Acutely toxic for aquatic organisms. The inhibition of the degradation activity of activated sludge is not anticipated when introduced to biological treatment plants in appropriate low concentrations.

Toxicity to fish:

LC50 (96 h) 6,78 mg/l, Leuciscus idus (DIN 38412 Part 15, static)

Aquatic invertebrates:

EC50 (48 h) 3,23 mg/l, Daphnia magna (OECD Guideline 202, part 1, static)
The statement of the toxic effect relates to the analytically determined concentration.

Aquatic plants:

EC50 (72 h) 4,91 mg/l (growth rate), Desmodesmus subspicatus (OECD Guideline 201, static)
The statement of the toxic effect relates to the analytically determined concentration.

Microorganisms/Effect on activated sludge:

EC10 (17 h) 270 mg/l, Pseudomonas putida (DIN 38412 Part 8, aerobic)

Chronic toxicity to fish:

No data available regarding toxicity to fish.

Chronic toxicity to aquatic invertebrates:
No data available regarding toxicity to daphnids.

Assessment of terrestrial toxicity:
No data available.

12.2. Persistence and degradability

Assessment biodegradation and elimination (H2O):
Not readily biodegradable (by OECD criteria). Poorly biodegradable. Poorly eliminated from water.

Elimination information:
< 20 % DOC reduction (3 h) (OECD Guideline 302 B) (aerobic, activated sludge, domestic, adapted)

< 10 % (28 d) (ISO 14593) (aerobic, activated sludge, domestic)

Assessment of stability in water:
No data available.

12.3. Bioaccumulative potential

Assessment bioaccumulation potential:
Based on its structural properties, the polymer is not biologically available. Accumulation in organisms is not to be expected.

12.4. Mobility in soil

Assessment transport between environmental compartments:
Adsorption in soil: Adsorption to solid soil phase is not expected.

12.5. Results of PBT and vPvB assessment

According to Annex XIII of Regulation (EC) No.1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH): The product does not fulfill the criteria for PBT (Persistent/bioaccumulative/toxic) and vPvB (very persistent/very bioaccumulative).

12.6. Endocrine disrupting properties

12.7. Other adverse effects

The substance is not listed in Regulation (EC) 1005/2009 on substances that deplete the ozone layer.

Results of PMT and vPvM assessment

Substance is not included in the list established in accordance with Article 59(1) of Regulation (EC) No 1907/2006 for having PMT/vPvM properties.

SECTION 13: Disposal Considerations

13.1. Waste treatment methods

Observe national and local legal requirements.

SECTION 14: Transport Information

Land transport

ADR

UN number or ID number:	UN3077
UN proper shipping name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (POLYVINYLPYRROLIDONE IODINE COMPLEX)
Transport hazard class(es):	9, EHSM
Packing group:	III
Environmental hazards:	yes
Special precautions for user:	None known

RID

UN number or ID number:	UN3077
UN proper shipping name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (POLYVINYLPYRROLIDONE IODINE COMPLEX)
Transport hazard class(es):	9, EHSM
Packing group:	III
Environmental hazards:	yes
Special precautions for user:	None known

Inland waterway transport

ADN

UN number or ID number:	UN3077
UN proper shipping name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (POLYVINYLPYRROLIDONE IODINE COMPLEX)
Transport hazard class(es):	9, EHSM
Packing group:	III
Environmental hazards:	yes

Special precautions for user:	None known

Transport in inland waterway vessel
Not evaluated

Sea transport

IMDG

UN number or ID number:	UN 3077
UN proper shipping name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (POLYVINYLPYRROLIDONE IODINE COMPLEX)
Transport hazard class(es):	9, EHSM
Packing group:	III
Environmental hazards:	yes Marine pollutant: YES
Special precautions for user:	EmS: F-A; S-F

Air transport

IATA/ICAO

UN number or ID number:	UN 3077
UN proper shipping name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (POLYVINYLPYRROLIDONE IODINE COMPLEX)
Transport hazard class(es):	9, EHSM
Packing group:	III
Environmental hazards:	yes
Special precautions for user:	None known

14.1. UN number or ID number
See corresponding entries for “UN number or ID number” for the respective regulations in the tables above.

14.2. UN proper shipping name
See corresponding entries for “UN proper shipping name” for the respective regulations in the tables above.

14.3. Transport hazard class(es)
See corresponding entries for “Transport hazard class(es)” for the respective regulations in the tables above.

14.4. Packing group
See corresponding entries for “Packing group” for the respective regulations in the tables above.

14.5. Environmental hazards
See corresponding entries for “Environmental hazards” for the respective regulations in the tables above.

14.6. Special precautions for user
See corresponding entries for “Special precautions for user” for the respective regulations in the tables above.

14.7. Maritime transport in bulk according to IMO instruments

Maritime transport in bulk is not intended.

Further information
Product may be shipped as non-hazardous in suitable packages containing a net quantity of 5 kg or less under the provisions of various regulatory agencies: ADR, RID, ADN: Special Provision 375; IMDG: 2:10.2.7; IATA: A197; TDS: Special Provision 99(2); 49CFR: §171.4 (c) (2) and also the Special Provision 375 in Appendix B which is regulated in China "Regulations Concerning Road Transportation of Dangerous Goods Part 3: Index of dangerous goods name and transportation requirements" (JT/T 617.3)

SECTION 15: Regulatory Information

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

If other regulatory information applies that is not already provided elsewhere in this safety data sheet, then it is described in this subsection.

SECTION 16: Other Information

Assessment of the hazard classes according to UN GHS criteria (most recent version)

Eye Dam. 1
Skin Irrit. 2
Aquatic Acute 2
Aquatic Chronic 2
STOT RE (Thyroid gland) 2

Any other intended applications should be discussed with the manufacturer. Corresponding occupational protection measurements must be followed.

Full text of the classifications, including the hazard classes and the hazard statements, if mentioned in section 2 or 3:

STOT RE	Specific target organ toxicity — repeated exposure
Aquatic Chronic	Hazardous to the aquatic environment - chronic

Eye Dam.	Serious eye damage
Skin Irrit.	Skin irritation
Eye Dam./Irrit.	Serious eye damage/eye irritation
Skin Corr./Irrit.	Skin corrosion/irritation
Flam. Liq.	Flammable liquids
Acute Tox.	Acute toxicity
Skin Corr.	Skin corrosion
Eye Irrit.	Eye irritation
H318	Causes serious eye damage.
H315	Causes skin irritation.
H373	May cause damage to organs (Thyroid gland) through prolonged or repeated exposure.
H411	Toxic to aquatic life with long lasting effects.
H226	Flammable liquid and vapour.
H314	Causes severe skin burns and eye damage.
H331	Toxic if inhaled.
H302	Harmful if swallowed.
EUH071	Corrosive to the respiratory tract.

Abbreviations

ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road. ADN = The European Agreement concerning the International Carriage of Dangerous Goods by Inland waterways. ATE = Acute Toxicity Estimates. CAO = Cargo Aircraft Only. CAS = Chemical Abstract Service. CLP = Classification, Labelling and Packaging of substances and mixtures. DIN = German national organization for standardization. DNEL = Derived No Effect Level. EC50 = Effective concentration median for 50% of the population. EC = European Community. EN = European Standards. IARC = International Agency for Research on Cancer. IATA = International Air Transport Association. IBC-Code = Intermediate Bulk Container code. IMDG = International Maritime Dangerous Goods Code. ISO = International Organization for Standardization. STEL = Short-Term Exposure Limit. LC50 = Lethal concentration median for 50% of the population. LD50 = Lethal dose median for 50% of the population. TLV = Threshold Limit Value. MARPOL = The International Convention for the Prevention of Pollution from Ships. NEN = Dutch Norm. NOEC = No Observed Effect Concentration. OEL = Occupational Exposure Limit. OECD = Organization for Economic Cooperation and Development. PBT = Persistent, Bioaccumulative and Toxic. PNEC = Predicted No Effect Level. PPM = Parts per million. RID = The European Agreement concerning the International Carriage of Dangerous Goods by Rail. TWA = Time Weight Average. UN-number = UN number at transport. vPvB = very Persistent and very Bioaccumulative.

The data contained in this safety data sheet are based on our current knowledge and experience and describe the product only with regard to safety requirements. This safety data sheet is neither a Certificate of Analysis (CoA) nor technical data sheet and shall not be mistaken for a specification agreement. Identified uses in this safety data sheet do neither represent an agreement on the corresponding contractual quality of the substance/mixture nor a contractually designated use. It is the responsibility of the recipient of the product to ensure any proprietary rights and existing laws and legislation are observed.