

## Material Safety Data Sheet

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

#### 1.1 Product identifiers

Product name	N-Vinylformamide
Product number	W610598
Brand	3ASenrise
CAS number	13162-05-5

#### 1.2 Details of the supplier of the safety data sheet

Company: Anhui Senrise Technology Co., Ltd.

Address: No.88 Weisan Road, High-Tech Industrial Development Zone, Anqing, Anhui

Post code: 246003

Tel: 400-005-6266

Fax: 0556-5555368

Email: service@3asenrise.com

#### 1.3 Emergency telephone

Emergency telephone: 0556-5500208

#### 1.4 Relevant identified uses of the substance or mixture and uses advised against

Identified uses: For R&D use only. Not for pharmaceutical, household or other uses.

### 2 HAZARDS IDENTIFICATION

#### 2.1 Classification of the substance or mixture

Acute toxicity, Oral (Category 4), H302

Skin corrosion/irritation (Category 2), H315

Serious eye damage/eye irritation (Category 1), H318

Carcinogenicity (Category 2), H351

Reproductive toxicity (Category 1B), H360

Specific target organ toxicity - single exposure (Category 2), Eyes, Central nervous system, H371

Specific target organ toxicity - single exposure (Category 3), respiratory tract irritation, H335

#### 2.2 GHS label elements, including precautionary statements

##### Pictogram



Signal word: Danger

Hazard statement(s)

H302 Harmful if swallowed.  
H315 Causes skin irritation.  
H318 Causes serious eye damage.  
H335 May cause respiratory irritation.  
H351 Suspected of causing cancer.  
H360 May damage fertility or the unborn child.  
H371 May cause damage to organs.

### **Precautionary statement(s)**

#### **Prevention**

P201 Obtain special instructions before use.  
P202 Do not handle until all safety precautions have been read and understood.  
P260 Do not breathe dust/fume/gas/mist/vapours/spray.  
P264 Wash hands thoroughly after handling.  
P270 Do not eat, drink or smoke when using this product.  
P271 Use only outdoors or in a well-ventilated area.  
P280 Wear protective gloves/protective clothing/eye protection/face protection.

#### **Response**

P301+P312+P330 IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell. Rinse mouth.  
P302+P352 IF ON SKIN: wash with plenty of soap and water.  
P304+P340+P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor if you feel unwell.  
P305+P351+P338+P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/ doctor.  
P308+P311 IF exposed or concerned: Call a POISON CENTER/ doctor.  
P332+P313 IF SKIN irritation occurs: Get medical advice/attention.

#### **Storage**

P403+P233 Store in a well-ventilated place. Keep container tightly closed.  
P405 Store locked up.

#### **Disposal**

P501 Dispose of contents/ container to an approved waste disposal plant.

### **2.3 Physical and chemical hazards**

No data available

### **2.4 Health hazards**

H302 Harmful if swallowed.  
H315 Causes skin irritation.  
H318 Causes serious eye damage.  
H335 May cause respiratory irritation.  
H351 Suspected of causing cancer.  
H360 May damage fertility or the unborn child.  
H371 May cause damage to organs.

### **2.5 Environmental hazards Code**

No data available

### **2.6 Other hazards**

No data available

## **3 COMPOSITION/INFORMATION ON INGREDIENTS**

### **Substance / Mixture: Substance**

#### **3.1 Substance**

Name	N-Vinylformamide
Formula	C <sub>3</sub> H <sub>5</sub> NO
Molecular Weight	71.08
CAS	13162-05-5
Concentration	98%

## 4 FIRST AID MEASURES

### 4.1 Description of first aid measures

#### General advice

Consult a physician. Show this safety data sheet to the doctor in attendance.

#### If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

#### In case of skin contact

Wash off with soap and plenty of water. Consult a physician.

#### In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

#### If swallowed

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

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

No data available.

## 5 FIREFIGHTING MEASURES

### 5.1 Extinguishing media

Water Foam Carbon dioxide (CO<sub>2</sub>) Dry powder

### 5.2 Special hazards arising from the substance or mixture

Carbon oxides Nitrogen oxides (NO<sub>x</sub>) Combustible. Vapors are heavier than air and may spread along floors. Forms explosive mixtures with air on intense heating. Development of hazardous combustion gases or vapours possible in the event of fire.

### 5.3 Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

## 6 ACCIDENTAL RELEASE MEASURES

### 6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation.

### 6.2 Environmental precautions

Do not let product enter drains.

### 6.3 Methods and materials for containment and cleaning up

Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations.

### 6.4 Reference to other section

For disposal see section 13.

## 7 HANDLING AND STORAGE

### 7.1 Precautions for safe handling

#### Advice on safe handling

Work under hood. Do not inhale substance/mixture. Avoid generation of vapours/aerosols.

#### Advice on protection against fire and explosion

Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge.

### **Hygiene measures**

Change contaminated clothing. Preventive skin protection recommended. Wash hands after working with substance.

## **7.2 Conditions for safe storage, including any incompatibilities**

### **Storage conditions**

Keep container tightly closed in a dry and well-ventilated place. Keep away from heat and sources of ignition.

Long term storage: 2–8° C

## **8 EXPOSURE CONTROLS/PERSONAL PROTECTION**

### **8.1 Control parameters**

No data available.

### **8.2 Personal protective equipment**

#### **Eye/face protection**

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Safety glasses.

#### **Skin protection**

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product.

#### **Body protection**

Flame retardant antistatic protective clothing.

#### **Respiratory protection**

If the exposure limits are exceeded, irritation or other symptoms are experienced, use a full-face respirator.

#### **Control of environmental exposure**

Do not let product enter drains. Risk of explosion.

## **9 PHYSICAL AND CHEMICAL PROPERTIES**

### **9.1 Information on basic physical and chemical properties**

a) Appearance	Colorless to yellow brown to dark green liquid
b) Odor	No data available
c) pH	No data available
d) Melting point/freezing point	-16 ° C
e) Initial boiling point and boiling range	210 ° C
f) Upper/lower flammability or explosive limits	No data available
g) Flash point	102 ° C
h) Evaporation rate	No data available
i) Vapor pressure	0.133 hPa at 25 ° C
j) Vapor density	No data available
k) Density	1.014 g/mL at 25 ° C
l) Water solubility	No data available
m) Partition coefficient: n-octanol/water	No data available
n) Autoignition temperature	No data available
o) Decomposition temperature	No data available
p) Flammability	No data available

## **10 STABILITY AND REACTIVITY**

### **10.1 Chemical stability**

No data available.

## 10.2 Conditions to avoid

No data available.

## 10.3 Incompatible materials

Bases, Peroxides, Reacts violently with:, Strong acids

## 10.4 Hazardous decomposition products

In the event of fire: see section 5.

# 11 TOXICOLOGICAL INFORMATION

## 11.1 Acute toxicity

LD50 Oral

No data available

LC50 Inhalation

No data available

LD50 Dermal

No data available

## 11.2 Skin corrosion/irritation

Mixture causes skin irritation.

## 11.3 Serious eye damage/eye irritation

Mixture causes serious eye damage.

## 11.4 Respiratory or skin sensitization

No data available

## 11.5 Germ cell mutagenicity

No data available

## 11.6 Carcinogenicity

No data available

## 11.7 Reproductive toxicity

May harm the unborn child. May impair fertility.

## 11.8 Specific target organ toxicity - single exposure

Mixture may cause respiratory irritation.

## 11.9 Specific target organ toxicity - repeated exposure

No data available

## 11.10 Aspiration hazard

no data available.

## 11.11 Additional Information

Other dangerous properties can not be excluded. This substance should be handled with particular care. Handle in accordance with good industrial hygiene and safety practice.

Components N-vinylformamide Acute toxicity Oral: Inhalation: Dermal: Skin

corrosion/irritation Serious eye damage/eye irritation Respiratory or skin sensitization Germ

cell mutagenicity Carcinogenicity Reproductive toxicity Specific target organ toxicity -

single exposure Specific target organ toxicity - repeated exposure Aspiration hazard Methanol

Acute toxicity Acute toxicity estimate Oral - 100.1 mg/kg (Expert judgment) Symptoms: Nausea,

Vomiting Acute toxicity estimate Inhalation - 4 h - 3.1 mg/l (Expert judgment) Symptoms:

Irritation symptoms in the respiratory tract. Acute toxicity estimate Dermal - 300.1 mg/kg

(Expert judgment) Skin corrosion/irritation Skin - Rabbit Result: No skin irritation

Drying-out effect resulting in rough and chapped skin. Serious eye damage/eye irritation Eyes

- Rabbit Result: No eye irritation Respiratory or skin sensitization Sensitisation test: -

Guinea pig Result: negative Germ cell mutagenicity Based on available data the classification

criteria are not met. Test Type: Ames test Test system: Salmonella typhimurium Result: negative Test Type: In vitro mammalian cell gene mutation test Test system: Chinese hamster lung cells Result: negative Method: OECD Test Guideline 474 Species: Mouse – male and female – Bone marrow Result: negative Carcinogenicity Did not show carcinogenic effects in animal experiments. Reproductive toxicity Based on available data the classification criteria are not met. Specific target organ toxicity – single exposure Causes damage to organs. – Eyes, Central nervous system Acute oral toxicity – Nausea, Vomiting Acute inhalation toxicity – Irritation symptoms in the respiratory tract. Specific target organ toxicity – repeated exposure Aspiration hazard Formamide Acute toxicity LD50 Oral – Rat – male and female – 5,325 mg/kg LC50 Inhalation – Rat – male – 4 h – > 21 mg/l LD50 Dermal – Rat – male and female – > 3,000 mg/kg Skin corrosion/irritation Skin – Rabbit Result: No skin irritation – 20 h Serious eye damage/eye irritation Eyes – Rabbit Result: slight irritation Respiratory or skin sensitization Germ cell mutagenicity Test Type: Ames test Test system: Escherichia coli/Salmonella typhimurium Result: negative Test Type: in vitro test Test system: Other cell types Result: positive Test Type: in vitro test Test system: Embryo Result: negative Method: OECD Test Guideline 474 Species: Mouse – male and female – Red blood cells (erythrocytes) Result: negative Method: OECD Test Guideline 474 Species: Mouse – male – Bone marrow Result: positive Method: OECD Test Guideline 477 Species: Drosophila melanogaster – male Result: negative Method: OECD Test Guideline 478 Species: Mouse – male Result: negative Carcinogenicity Suspected of causing cancer. Reproductive toxicity May damage the unborn child. Specific target organ toxicity – single exposure Specific target organ toxicity – repeated exposure Oral – May cause damage to organs through prolonged or repeated exposure. – Blood Aspiration hazard

## **12 ECOLOGICAL INFORMATION**

### **12.1 Toxicity**

Toxicity to fish:

No data available

Toxicity to daphnia and other aquatic:

No data available

Toxicity to algae:

No data available

Toxicity to bacteria:

No data available

### **12.2 Persistence and degradability**

No data available

### **12.3 Bioaccumulative potential**

No data available

### **12.4 Mobility in soil**

No data available

### **12.5 Other adverse effects**

No data available

## **13 DISPOSAL CONSIDERATIONS**

### **13.1 Waste treatment methods**

#### **Product**

Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable

solutions to a licensed disposal company. Observe all federal, state and local regulations when disposing of the substance.

### **Contaminated packaging**

Disposal must be made according to official regulations.

## **14 TRANSPORT INFORMATION**

### **14.1 UN number**

ADR/RID: - IMDG: - IATA: -

### **14.2 UN proper shipping name**

ADR/RID: Not applicable

IMDG: Not applicable

IATA-DGR: Not applicable

### **14.3 Transport hazard class(es)**

ADR/RID: - IMDG: - IATA: -

### **14.4 Packaging group**

ADR/RID: - IMDG: - IATA: -

### **14.5 Environmental hazards**

ADR/RID: no IMDG Marine pollutant: no IATA: no

### **14.6 Special precautions for user**

No data available

## **15. REGULATORY INFORMATION**

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

Applicable regulations

Please pay attention to waste disposal and meet the requirements of local regulations.

## **16. OTHER INFORMATION**

### **Abbreviations and acronyms**

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

IMDG: International Maritime Dangerous Goods

IATA: International Air Transport Association

RID: Regulation concerning the International Carriage of Dangerous Goods by Rail

CAS: Chemical Abstracts Service (division of the American Chemical Society)

### **Further information**

The above safety technical information is for reference only, because many physical and chemical properties are not entirely clear. Please consult information carefully before use and use after confirmation.

Anhui Senrise Technology Co., Ltd. shall not be held liable for any damage resulting from handling or from contact with the above product. More terms of use, see invoice information for details.

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