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Version: 7.6

Effective date: 09/04/2021

Previous Date: 09/01/2020

SAFETY DATA SHEET

KLARAID IC1176 (Hycog IC 18)

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

1.1. Product identifier

Trade name or designation of the mixture KLARAID IC1176 (Hycog IC 18)

Version number 7.6

Revision date 09/04/2021

Supersedes date 09/01/2020

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

Identified uses Surface and waste water coagulation

Uses advised against None known.

1.3. Details of the supplier of the safety data sheet

JV Process and Water Chemicals LLC

Address: Street V. Kadirov 10, Chirchik city,
Tashkent Region, Republic of Uzbekistan, 111727

Tel: +99871 209 10 40

Email address: info@pwch.uz

www.pwch.uz

1.4. Emergency telephone number

Multilingual emergency number (24/7)

Street V. Kadirov 10, Chirchik city,
Tashkent Region,
Republic of Uzbekistan, 111727

Tel: +99871 209 10 40

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

The mixture has been assessed and/or tested for its physical, health and environmental hazards and the following classification applies.

Classification according to Regulation (EC) No 1272/2008 as amended

Physical hazards

Corrosive to metals Category 1 H290 - May be corrosive to metals.

Health hazards

Serious eye damage/eye irritation Category 1 H318 - Causes serious eye damage.

Hazard summary May be corrosive to metals. Causes serious eye damage. Occupational exposure to the substance or mixture may cause adverse health effects.

2.2. Label elements

Label according to Regulation (EC) No. 1272/2008 as amended

Contains: Aluminum chloride, basic



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Hazard pictograms



Signal word

Danger

Hazard statements

H290 May be corrosive to metals.
H318 Causes serious eye damage.

Precautionary statements

Prevention

P234 Keep only in original packaging.
P280 Wear eye protection/face protection.

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 CENTRE/doctor.

Storage

P406 Store in a corrosion resistant container with a resistant inner liner.

Disposal

Not available.

Supplemental label information

None.

2.3. Other hazards

Not a PBT or vPvB substance or mixture.

SECTION 3: Composition/information on ingredients

Mixtures

Chemical description Aqueous acidic solution of inorganic salts

| Chemical name | % | CAS-No. / EC No. | REACH Registration No. | Index No. | Notes |
|--------------------------|------------------------------------|------------------------|------------------------|-----------|-------|
| Aluminum chloride, basic | 40 - < 50 | 1327-41-9 215-477-2 | 01-2119531563-43 | - | |
| Classification: | Met. Corr. 1;H290, Eye Dam. 1;H318 | | | | |

List of abbreviations and symbols that may be used above

#: This substance has been assigned Union workplace exposure limit(s).

M: M-factor

PBT: persistent, bioaccumulative and toxic substance.

vPvB: very persistent and very bioaccumulative substance.

All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

The full text for all H-statements is displayed in section 16.

SECTION 4: First aid measures

General information

Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

4.1. Description of first aid measures

Inhalation Move to fresh air. Call a physician if symptoms develop or persist.

Skin contact Wash off with soap and water. Get medical attention if irritation develops and persists.

Eye contact Do not rub eyes. Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention immediately.

Ingestion Rinse mouth. Get medical attention if symptoms occur.

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

Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. Dusts may irritate the respiratory tract, skin and eyes.



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4.3. Indication of any immediate medical attention and special treatment needed Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media Water fog. Foam. Dry chemical powder. Carbon dioxide (CO₂).

Unsuitable extinguishing media Do not use water jet as an extinguisher, as this will spread the fire.

5.2. Special hazards arising from the substance or mixture During fire, gases hazardous to health may be formed.

5.3. Advice for firefighters

Special protective equipment for firefighters Self-contained breathing apparatus and full protective clothing must be worn in case of fire. (CEN : EN 469)

Special fire fighting procedures Move containers from fire area if you can do so without risk. Prevent spillage and fire-fighting water from entering in public sewers or the immediate environment.

Specific methods Use standard firefighting procedures and consider the hazards of other involved materials.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

For non-emergency personnel Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

For emergency responders Keep unnecessary personnel away. Use personal protection recommended in Section 8 of the SDS.

6.2. Environmental precautions Avoid discharge into drains, water courses or onto the ground.

6.3. Methods and material for containment and cleaning up Prevent entry into waterways, sewer, basements or confined areas. Stop the flow of material, if this is without risk.

Large Spills: Wet down with water and dike for later disposal. Absorb spillage to prevent material damage. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Shovel the material into waste container. Following product recovery, flush area with water.

Small Spills: Sweep up or vacuum up spillage and collect in suitable container for disposal. Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.

For personal protection, see section 8 of the SDS. For waste disposal, see section 13 of the SDS.

6.4. Reference to other sections

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Do not get this material in contact with eyes. Avoid prolonged exposure. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.

7.2. Conditions for safe storage, including any incompatibilities

Store in a cool, dry place out of direct sunlight. Store in corrosive resistant container with a resistant inner liner. Store in tightly closed container. Keep only in the original container. Store in a well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS).

7.3. Specific end use(s)

Only for industrial users

Shelf life

360 Days

SECTION 8: Exposure controls/personal protection

8.1. Control parameters



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Occupational exposure limits

UK. EH40 Workplace Exposure Limits (WELs)

| Components | Type | Value |
|--|------|---------------------|
| Aluminum chloride, basic (CAS 1327-41-9) | TWA | 2 mg/m ³ |

Biological limit values No biological exposure limits noted for the ingredient(s).

Recommended monitoring procedures Follow standard monitoring procedures.

Derived no effect levels (DNELs)

Workers

| Components | Value | Assessment factor | Notes |
|--|------------------------|-------------------|---------------|
| Aluminum chloride, basic (CAS 1327-41-9) | | | |
| Long-term, Systemic, Dermal | 4,6 mg/kg bw/day | 50 | Neurotoxicity |
| Long-term, Systemic, Inhalation | 16,4 mg/m ³ | 12.5 | Neurotoxicity |

Predicted no effect concentrations (PNECs)

| Components | Value | Assessment factor | Notes |
|--|-----------|-------------------|-------|
| Aluminum chloride, basic (CAS 1327-41-9) | | | |
| Freshwater | 0,3 µg/l | 50 | |
| Marine water | 0,03 µg/l | 500 | |
| STP | 20 mg/l | 10 | |

8.2. Exposure controls

Appropriate engineering controls Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. If engineering measures are not sufficient to maintain concentrations of dust particulates below the OEL (occupational exposure limit), suitable respiratory protection must be worn. Provide eyewash station.

Individual protection measures, such as personal protective equipment

General information Use personal protective equipment as required. Personal protection equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment.

Eye/face protection Wear safety glasses with side shields (or goggles) and a face shield.
CEN : EN 166

Skin protection

- Hand protection PVC gloves (Protection against unintentional short-term contact)
Neoprene gloves (Protection against unintentional short-term contact)
Coating thickness: 0.65 mm
Penetration time: > 480 min
CEN : EN 374-1/2/3/4; EN 420

- Other Wear suitable protective clothing.
CEN : EN ISO 13688; EN ISO 6529; EN 14605

Respiratory protection In case of insufficient ventilation, use a breathing mask with filter type: P2
CEN : EN 140; EN 143; EN 149

Thermal hazards Wear appropriate thermal protective clothing, when necessary.

Hygiene measures Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

Environmental exposure controls Environmental manager must be informed of all major releases. Prevent from entering in public sewers or the immediate environment.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance

Colour Colourless to white



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| | |
|---|-------------------|
| Physical state | Liquid |
| Odour | Mild |
| Odour threshold | Not available. |
| pH (concentrated product) | < 1 Neat |
| pH in aqueous solution | 3,9 (1% Solution) |
| Melting point/freezing point | -20 °C |
| Initial boiling point and boiling range | 104 °C |
| Flash point | Not applicable. |
| Evaporation rate | Slower than Ether |
| Flammability (solid, gas) | Not applicable. |
| Upper/lower flammability or explosive limits | |
| Flammability limit - lower (%) | Not available. |
| Flammability limit - upper (%) | Not available. |
| Vapour pressure | 18 mmHg |
| Vapour pressure temp. | 21 °C |
| Vapour density | < 1 |
| Relative density | 1,36 |
| Relative density temperature | 21 °C |
| Solubility | |
| Solubility (water) | 100 % |
| Partition coefficient (n-octanol/water) | Not available. |
| Auto-ignition temperature | Not applicable. |
| Decomposition temperature | Not available. |
| Viscosity | 175 mPa.s |
| Viscosity temperature | 20 °C |
| Explosive properties | Not explosive. |
| Oxidising properties | Not oxidising. |
| 9.2. Other information | |
| Shelf life | 360 Days |
| VOC | 0 % Estimated |

SECTION 10: Stability and reactivity

| | |
|---|--|
| 10.1. Reactivity | May be corrosive to metals. |
| 10.2. Chemical stability | Material is stable under normal conditions. |
| 10.3. Possibility of hazardous reactions | Hazardous polymerisation does not occur. |
| 10.4. Conditions to avoid | Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. |
| 10.5. Incompatible materials | Strong oxidising agents. Metals. Bases. |
| 10.6. Hazardous decomposition products | Hydrogen chloride. |

SECTION 11: Toxicological information

11.1. Information on toxicological effects

| Product | Test Results |
|---|---|
| KLARAIID IC1176 (Hycog IC 18) (Mixture) | Acute Dermal LD50 Rabbit: > 2000 mg/kg (Calculated according to GHS additivity formula) |



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| Product | Test Results |
|---|---|
| | Acute Inhalation LC50 Rat: > 5 mg/l/4h (Calculated according to GHS additivity formula) Acute Oral LD50 Rat: > 2000 mg/kg (Calculated according to GHS additivity formula) |
| Components | Test Results |
| Aluminum chloride, basic (1327-41-9) | Acute Dermal LD50 Rabbit: > 2000 mg/kg Acute Inhalation LC50 Rat: > 5 mg/l 4 hour Acute Oral LD50 Rat: > 2000 mg/kg |
| Acute toxicity | Based on available data, the classification criteria are not met. |
| Skin corrosion/irritation | Based on available data, the classification criteria are not met. |
| Serious eye damage/irritation | Causes serious eye damage. |
| Respiratory or skin sensitisation | Based on available data, the classification criteria are not met. |
| Specific target organ toxicity - repeated exposure | Based on available data, the classification criteria are not met. |
| Specific target organ toxicity - single exposure | Based on available data, the classification criteria are not met. |
| Carcinogenicity | Based on available data, the classification criteria are not met. |
| Germ cell mutagenicity | Based on available data, the classification criteria are not met. |
| Reproductive toxicity | Based on available data, the classification criteria are not met. |
| General information | Occupational exposure to the substance or mixture may cause adverse effects. |
| Information on likely routes of exposure | |
| Ingestion | May cause irritation of the gastrointestinal tract. |
| Inhalation | Dust may irritate respiratory system. Inhalation of dusts may cause respiratory irritation. |
| Skin contact | This product is not expected to cause skin sensitisation. May be irritating to the skin. |
| Eye contact | Causes serious eye damage. |
| Symptoms | Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. Dusts may irritate the respiratory tract, skin and eyes. |
| Aspiration hazard | Based on available data, the classification criteria are not met. |
| Mixture versus substance information | No information available. |
| Other information | Not available. |

SECTION 12: Ecological information

12.1. Toxicity Based on available data, the classification criteria are not met for hazardous to the aquatic environment.

| Product | Species | Test Results |
|--|-----------------------|---------------------|
| KLARAID IC1176 (Hycog IC 18) (CAS Mixture) | EC50 Daphnia magna | > 100 mg/l, 48 hour |

12.2. Persistence and degradability

The product solely consists of inorganic compounds which are not biodegradable.

- Closed Bottle Test (% Degradation in 28 days) 0,2

12.3. Bioaccumulative potential No data available.

Partition coefficient n-octanol/water (log Kow) Not available.



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| | |
|---|---|
| Bioconcentration factor (BCF) | Not available. |
| 12.4. Mobility in soil | No data available. |
| 12.5. Results of PBT and vPvB assessment | Not a PBT or vPvB substance or mixture. |
| 12.6. Other adverse effects | No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component. |

SECTION 13: Disposal considerations

13.1. Waste treatment methods

| | |
|-------------------------------------|--|
| Residual waste | Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions). |
| Contaminated packaging | Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal. According to Hazardous Waste Regulations. EWC (European Waste Code) recommendation : 15 01 10 15 Waste packaging; absorbents, wiping cloths, filter materials and protective clothing not otherwise specified. 15 01 Packaging (including separately collected municipal packaging waste). 15 01 10 Packaging containing residues of or contaminated by dangerous substances. Depending on the origin and state of the waste, other EWC numbers may be applicable too. |
| Disposal methods/information | Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations. According to Hazardous Waste Regulations. EWC (European Waste Code) recommendation : 16 03 03 16 Wastes not otherwise specified in the list. 16 03 Off-specification batches and unused products. 16 03 03 Inorganic wastes containing dangerous substances. Depending on the origin and state of the waste, other EWC numbers may be applicable too. |
| Special precautions | Dispose in accordance with all applicable regulations. |

SECTION 14: Transport information

ADR

| | |
|---|---|
| 14.1. UN number | UN3264 |
| 14.2. UN proper shipping name | Corrosive liquid, acidic, inorganic, n.o.s. (Aluminum chloride, basic, Mixture) |
| 14.3. Transport hazard class(es) | |
| Class | 8 |
| Subsidiary risk | - |
| Tunnel restriction code (E) | |
| 14.4. Packing group | III |
| 14.5. Environmental hazards | No. |
| 14.6. Special precautions for user | Read safety instructions, SDS and emergency procedures before handling. |

RID

| | |
|---|---|
| 14.1. UN number | UN3264 |
| 14.2. UN proper shipping name | Corrosive liquid, acidic, inorganic, n.o.s. (Aluminum chloride, basic, Mixture) |
| 14.3. Transport hazard class(es) | |
| Class | 8 |
| Subsidiary risk | - |
| 14.4. Packing group | III |
| 14.5. Environmental hazards | No. |
| 14.6. Special precautions for user | Read safety instructions, SDS and emergency procedures before handling. |

ADN

| | |
|------------------------|--------|
| 14.1. UN number | UN3264 |
|------------------------|--------|



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14.2. UN proper shipping name Corrosive liquid, acidic, inorganic, n.o.s. (Aluminum chloride, basic, Mixture)

14.3. Transport hazard class(es)

Class 8

Subsidiary risk -

14.4. Packing group III

14.5. Environmental hazards No.

14.6. Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

IATA

14.1. UN number UN3264

14.2. UN proper shipping name Corrosive liquid, acidic, inorganic, n.o.s. (Aluminum chloride, basic, Mixture)

14.3. Transport hazard class(es)

Class 8

Subsidiary risk -

14.4. Packing group III

14.5. Environmental hazards No.

ERG Code Not available.

14.6. Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

IMDG

14.1. UN number UN3264

14.2. UN proper shipping name Corrosive liquid, acidic, inorganic, n.o.s. (Aluminum chloride, basic, Mixture)

14.3. Transport hazard class(es)

Class 8

Subsidiary risk -

14.4. Packing group III

14.5. Environmental hazards

Marine pollutant No.

EmS F-A, S-B

14.6. Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code Not established.

ADN; ADR; IATA; IMDG; RID



SECTION 15: Regulatory information

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

EU regulations

Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex I and II, as amended
Not listed.



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Regulation (EC) No. 850/2004 On persistent organic pollutants, Annex I as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 1 as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 2 as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 3 as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex V as amended

Not listed.

Regulation (EC) No. 166/2006 Annex II Pollutant Release and Transfer Registry, as amended

Not listed.

Regulation (EC) No. 1907/2006, REACH Article 59(10) Candidate List as currently published by ECHA

Not listed.

Authorisations

Regulation (EC) No. 1907/2006, REACH Annex XIV Substances subject to authorization, as amended

Not listed.

Restrictions on use

Regulation (EC) No. 1907/2006, REACH Annex XVII Substances subject to restriction on marketing and use as amended

Not listed.

Directive 2004/37/EC: on the protection of workers from the risks related to exposure to carcinogens and mutagens at work, as amended.

Not listed.

Other EU regulations

Directive 2012/18/EU on major accident hazards involving dangerous substances, as amended

Not listed.

Other regulations

The product is classified and labelled in accordance with Regulation (EC) 1272/2008 (CLP Regulation) as amended. This Safety Data Sheet complies with the requirements of Regulation (EC) No 1907/2006, as amended.

National regulations

Not available.

15.2. Chemical safety assessment

No Chemical Safety Assessment has been carried out.

Inventory status

| Country(s) or region | Inventory name | On inventory (yes/no)* |
|----------------------|--|------------------------|
| Europe | European Inventory of Existing Commercial Chemical Substances (EINECS) | Yes |
| Europe | European List of Notified Chemical Substances (ELINCS) | No |

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

SECTION 16: Other information

List of abbreviations

CAS: Chemical Abstract Service.
 EC-No: European Commission Number
 CLP: Classification, Labeling and Packaging REGULATION (EC) No 1272/2008 on classification, labeling and packaging of substances and mixtures.
 CEN: European Committee for Standardization (Comité Européen de Normalisation).
 TWA: Time Weighted Average.
 STEL: Short-term Exposure Limit.
 LD50: Lethal Dose 50%.
 LC50: Lethal Concentration 50%.
 EC50: Effective Concentration 50%.
 NOEL: No observed effect level.
 COD: Chemical Oxygen Demand



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BOD: Biochemical oxygen demand.

TOC: Total Organic Carbon.

ADR: European agreement concerning the international carriage of dangerous goods by road (Accord européen relatif transport des marchandises dangereuses par route).

ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways (Accord européen relatif au transport international des marchandises dangereuses par voies de navigation intérieures).

IATA: International Air Transport Association

IMDG Code: International Maritime Dangerous Goods Code.

RID: Regulations concerning the international carriage of dangerous goods by rail (Règlement International concernant le transport de marchandises dangereuses par chemin de fer).

Safety data sheets of raw materials.

References

Information on evaluation method leading to the classification of mixture

The physical, health and environmental hazards of this mixture are assessed by applying the classification criteria for each hazard class or differentiation in Parts 2 to 5 of Annex I to Regulation (EC) No 1272/2008 (CLP). The classification for health and environmental hazards is derived by a combination of calculation methods and test data, if available.

Full text of any H-statements not written out in full under Sections 2 to 15

H290 May be corrosive to metals.

H318 Causes serious eye damage.

Revision information

This document has undergone significant changes and should be reviewed in its entirety.

Training information

Provide training on safe handling while considering the type of application and exposure scenarios. Follow training instructions when handling this material.

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Based on EC Directive / Regulations

(EC) No 1907/2006 (REACH)

(EC) No 1272/2008

(EU) No 1357/2014

(EU) 2015/830

Further information

Correction in Section: 2,4,5,6,7,8,10,11