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SAFETY DATA SHEET **CATALOG #s 1008, 1010, 1011**
FORMALDEHYDE

1. IDENTIFICATION

Product name: FORMALDEHYDE

COMPANY IDENTIFICATION
TOUSIMIS RESEARCH CORP.
2211 LEWIS AVENUE
ROCKVILLE, MD 20851
UNITED STATES

Company Contact Information:
301-881-2450
trc@tousimis.com

EMERGENCY TELEPHONE NUMBER
24-Hour Emergency Contact: 1-800-222-1222

2. HAZARDS IDENTIFICATION

Hazard classification
GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Flammable solids (Category 2), H228
Acute toxicity, Oral (Category 4), H302
Acute toxicity, Inhalation (Category 4), H332
Skin irritation (Category 2), H315
Serious eye damage (Category 1), H318
Skin sensitization (Category 1), H317
Carcinogenicity (Category 2), H351
Specific target organ toxicity – single exposure (Category 3), Respiratory system, H335
Acute aquatic toxicity (Category 3), H402
Chronic aquatic toxicity (Category 3), H412

For the full text of the H-Statements mentioned in this Section, see Section 16.

GHS Label elements, including precautionary statements

Pictograms

Hazard statement(s)
H228 Flammable solid.
H302 + H332 Harmful if swallowed or if inhaled
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H318 Causes serious eye damage.
H335 May cause respiratory irritation.
H351 Suspected of causing cancer.
H412 Harmful to aquatic life with long lasting effects.

Precautionary statement(s)
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P210 Keep away from heat/sparks/open flames/hot surfaces – No smoking.
P240 Ground/bond container and receiving equipment.
P241 Use explosion-proof electrical/ventilating/lighting equipment.
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.
P272 Contaminated work clothing should not be allowed out of the workplace.
P273 Avoid release to the environment.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P301 + P312 IF SWALLOWED; Call a POISON CENTER or doctor/physician if you feel unwell
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
P304 + P 340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
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 doctor/physician
P321 Specific treatment (see supplemental first aid instructions on this label).
P330 Rinse mouth.
P333 + P313 If skin irritation or rash occurs: Get medical advice/attention.
P362 Take off contaminated clothing and wash before reuse.
P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.
P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
P405 Store locked up.
P501 Dispose of contents/container to an approved waste disposal plant.

Hazards not otherwise classified (HNOC) or not covered by GHS
Combustible dust

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substances
Synonyms
Polyoxymethylene
Formula
$CH_2O]_n$
Molecular Weight
30.03g/mol

CAS-No.
30525-89-4

Hazardous components
Paraformaldehyde
Classification: Flam. Sol. 2; Acute Tox. 4; Skin Irrit. 2; Eye Dam. 1; Skin Sens. 1; Carc. 2; STOT SE 3; Aquatic Acute 3; Aquatic Chronic 3; H228, H302 + H332, H315, H317, H318, H335, H351, H412

Concentration: 90-100%

For full text of the H-Statements mentioned in this Section, see Section 16

4. FIRST AID MEASURES

Description of first aid measures
General Advice
Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

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.

Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2) and/or in section 11.

Indication of any immediate medical attention and special treatment needed
No data available

5. FIREFIGHTING MEASURES

Extinguishing media
Suitable extinguishing agents Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special hazards arising from the substance or mixture
Carbon oxides

Advice for firefighters
Wear self-contained breathing apparatus for fire-fighting if necessary.

Further information
Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures
Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Avoid breathing dust. For personal protection see section 8.

Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

Methods and material for containment and cleaning up: Sweep up and shovel. 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 (see section 13). Keep in suitable, closed containers for disposal. Contain spillage, pick up with an electrically protected vacuum cleaner or by wet-brushing and transfer to a container for disposal according to local regulations (see section 13).

Reference to other sections
For disposal see section 13.

7. HANDLING AND STORAGE

Precautions for safe handling
Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs.

Provide appropriate exhaust ventilation at places where dust is formed. Keep away from sources of ignition – No smoking. Take measures to prevent the build-up of electrostatic charge.
For precautions see section 2.

Conditions for safe storage, including any incompatibilities
Keep container tightly closed in a dry and well-ventilated place.

Handle and store under inert gas. Moisture sensitive. Keep in a dry place.

Specific end use(s)
Apart from the uses mentioned in section 1 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters
Components with workplace control parameters
Contains no substances with occupational exposure limit values.

Exposure controls

Appropriate engineering controls
Handle in accordance with good industrial and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment

Eye/face protection
Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166 (EU).

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. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested: Dermatril® (KCL 740 / Aldrich Z677272, Size M)

Splash contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested: Dermatril® (KCL 740 / Aldrich Z677272, Size M)

Data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory on ly and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body protection
Complete suit protecting against chemicals, Flame retardant antistatic protective clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

General Information	
Appearance	
Form	Powder
Smell	Pungent
Odor Threshold	No data available
pH	4.0-5.5
Melting point/range	120-170ºC (248-338ºF) – lit.
Boiling point/range	No data available
Flash point	70ºC (158ºF) – closed cup
Evapouration rate	No data available
Flammability (solid, gas)	May form combustible dust concentrations in air
Upper/lower flammability or explosive limits	No data available
Vapour pressure	No data available
Vapour density	No data available
Relative density	0.88 g/cm3 at 25ºC (77ºF)
Water solubility	**I**nsoluble
Partition coefficient: n-octanol/water	No data available
Auto-ignition temperature	No data available
Decomposition temperature	No data available

Viscosity	No data available
Explosive properties	No data available
Oxidizing properties	No data available

Other safety information

Bulk density	500-800 kg/m3

10. STABILITY AND REACTIVITY

Reactivity: No data available

Chemical stability: Stable under recommended storage conditions.

Possibility of hazardous reactions: No data available

Conditions to avoid
Exposure to moisture.
Heat, flames and sparks. Extremes of temperature and direct sunlight.

Incompatible materials:
Brass, Steel (all types and surface treatments), Copper, Acid anhydrides, Strong oxidizing agents, Strong reducing agents

Hazardous decomposition products:
Other decomposition products – No data available
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

Toxicological information on this product or its components appear in this section when such data is available.

Information on toxicological effects

Acute toxicity:
LD50 Oral – Rat – 592 mg/kg

LC50 Inhalation – Rat – 4 h – 1,070 mg/m3
Remarks: Sense Organs and Special Senses (Nose, Eye, Ear, and Taste): Eye: Lacrimation. Lungs, Thorax, or Respiration: Dyspnea.

LDLO Dermal – Rat – 10,000 mg/kg

No data available

Skin corrosion/irritation
No data available

Serious eye damage/eye irritation
Eyes – Rabbit
Result: Severe eye irritation

Repiratory or skin sensitization
No data available

Germ cell mutagenicity: No data available

Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels great than or equal to 0.1% is identified as known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity: No data available

Specific target organ system toxicity – repeated exposure: No data available

Specific target organ system toxicity – single exposure: Inhalation – May cause respiratory irritation.

Aspiration hazard: No data available

Additional toxicological information
RTECS: RV0540000

May cause permanent eye injury.

Liver – Irregularities – Based on Human Evidence

12. ECOLOGICAL INFORMATION

Ecotoxicological information on this product or its components appear in this section when such data is available.

Toxicity
Toxicity to daphnia and EC50 – Daphnia magna (Water flea) – 42 mg/l – 24 h
Other aquatic invertebrates

Persistence and degradability
No data available

Ratio BOD/ThBOD 37%

Bioaccumulative potential
No data available

Mobility in soil
No data available

Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

Other adverse effects: An environmental hazard cannot be excluded in the event of Unprofessional handling or disposal.
Harmful to aquatic life.

13. DISPOSAL CONSIDERATIONS

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. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN number: 2213
Class 4.1
Packing group: III
Proper shipping name: Paraformaldehyde
Reportable Quantity (RQ): 1000 lbs
Marine pollutant: No

Poison Inhalation Hazard: No

IMDG
UN number: 2213
Class 4.1
Packing group: III
EMS-No: F-A, S-G
Proper shipping name: PARAFORMALDEHYDE
Marine pollutant: No

IATA
UN number: 2213
Class 4.1

Packing group: III
EMS-No: F-A, S-G
Proper shipping name: PARAFORMALDEHYDE

15. REGULATORY INFORMATION

SARA 302 Components
No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards
Fire Hazard, Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components
Paraformaldehyde
CAS-No. 30525-89-4

Pennsylvania Right To Know Components
Paraformaldehyde
CAS-No. 30525-89-4

New Jersey Right To Know Components
Paraformaldehyde
CAS-No. 30525-89-4

California Prop. 65 Components

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Acute Tox.	Acute toxicity
Aquatic Acute	Acute aquatic toxicity
Aquatic Chronic	Chronic aquatic toxicity
Carc.	Carcinogenicity
Eye Dam.	Serious eye damage
Flam. Sol.	Flammable solids
H228	Flammable solid
H302	Harmful if swallowed
H302 + H332	Harmful if swallowed or if inhaled
H315	Causes skin irritation
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.

HMIS Rating

Health hazard:	2
Chronic Health Hazard	
Flammability:	2
Physical Hazard	2

NFPA Rating

Health hazard:	2
Fire Hazard:	2
Reactivity Hazard:	2

Further information

 The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. tousimis® and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.tousimis.com for additional terms and conditions of sale.

Preparation Information

tousimis®
Product Safety
301-881-2450