



PT. TRIDOMAIN CHEMICALS

Jl. Raya Merak Km. 117 Desa Gerem Kec. Grogol – Cilegon
 Banten 42438, INDONESIA
 Telp. (0254) 570-142, Fax. (0254) 571-458

PEDOMAN KESELAMATAN KERJA (SAFETY MANUAL)	NOMOR INSTRUKSI : WORK INSTRUCTION NO. PKK - 28	REVISI KE : REVISION NO. 3
MATERIAL SAFETY DATA SHEET (MSDS) ACRYLAMIDE (50% solution)	TANGGAL : ISSUE DATE Aug 01 st , 2012 REVIEWED ON : November 17, 2014	HALAMAN : PAGE 1 OF 11

SECTION 1 – MATERIAL IDENTIFICATION

MATERIAL NAME IDENTIFIER	: 50 % Aqueous Acrylamide
MANUFACTURE / SUPPLIER	: PT. TRIDOMAIN CHEMICALS
STREET ADDRESS	: Jl. Raya Merak Km. 117. Desa Gerem Kec. Grogol – Cilegon
CITY	: Banten Province : Banten 42438, INDONESIA
POSTAL CODE	: 42438, EMERGENCY TEL : NO. + 62 (0254) 570-142 Telefax + 62 (0254) 571-458

SECTION 2 – HAZARD IDENTIFICATION

GHS CLASSIFICATION OF THE SUBSTANCE OR MIXTURE :
 PHYSICAL HAZARDS.

- Explosives
- Flammable gases : Not applicable
- Flammable aerosols : Not applicable
- Oxidizing gases : Not applicable
- Gases under pressure : Not applicable
- Flammable liquids : Not applicable
- Flammable solids : Not applicable
- Self-reactive substances and mixtures : Not Classified
- Pyrophoric liquids : Not Classified
- Pyrophoric solids : Not Classified
- Self heating substances and mixtures : Classification not possible
- Substances and mixtures, which in contact with water, emit
- Flammable gases : Not applicable
- Oxidizing gases : Not applicable
- Oxidizing solids : Not applicable
- Organic peroxides : Not applicable
- Corrosive to metals : Classification not possible

HEALTH HAZARDS

- Acute toxicity : Oral : Category 3



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Acute toxicity : skin : Category 3
 Acute toxicity : inhalation (gas) : Not applicable
 Acute toxicity : inhalation (vapour) possible : Classification not
 Acute toxicity : inhalation (dust) : Not applicable
 Acute toxicity : inhalation (mist) possible : Classification not
 Skin corrosion / irritation : Category 3
 Serious eye damage/eye irritation : Category 2A
 Respiratory sensitization possible : Classification not
 Skin sensitization : Category 1
 Ger cell mutagenicity : Category 1B
 Carcinogenicity : Category 1B
 Toxic to reproduction : Category 1B
 Specific target organ toxicity (single exposure) system, testis : Category 1 (nervous)
 Specific target organ toxicity (repeated exposure) system, testis : Category 1 (nervous)
 Aspiration hazard possible : Classification not

ENVIROMENTAL HAZARDS

Hazardous to the aquatic environment (acute) : Category 3
 Hazardous to the aquatic environment (chronic) : Not classified

GHS LABEL ELEMENTS : PICTOGRAM :



SIGNAL WORD : TOXIC, AQUATIC ENVIRONMENT, CARCINOGEN, DANGER



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HAZARD STATEMENTS :

Toxic if swallowed.
Toxic in contact with skin.
Cause mild skin irritation.
Cause serious eye irritation.
May cause allergic skin reaction
May cause genetic defects.
May cause cancer
May damage fertility or the unborn child.
Cause damage to nervous system and testis.
Cause damaged to nervous system and testis through prolonged or repeated exposure.
Harmful to aquatic life.

PRECAUTIONARY STATEMENTS :

Prevention :

Obtain special instruction before use, and DO NOT handle until all safety precaution have been read and understood.
Use only outdoor or in a well ventilated area and DO NOT breathe mist / vapours.
Wash hands, face, and other necessary parts thoroughly, and gargle the throat after handling.
Use personal protective equipment; protective helmet/eye gloves/protective clothing/protective boots as required.
Avoid release to the environment.

Response :

IF SWALLOWED; rinse mouth. Do NOT induce vomiting, Get immediate medical advice/attention.

IF IN EYES : Rinse cautiously with water for several minutes,
Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists : Get medical advice/attention.

IF ON SKIN: Wash skin with soap and water/shower. If skin irritation or rash occurs: Get medical advice/attention.

If exposed or concerned, or if you feel unwell : Get medical advice/attention,



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Storage :

Store locked up.

Disposal :

Disposal of contents/container in accordance with local/regional/national/international regulations. Do not reuse the container for any other purpose. Dispose of in accordance with applicable laws and regulation.

OTHER HAZRDS WHICH DO NOT RESULT IN CLASSIFICATION :

Emits irritating and toxic fumes under fire conditions.

SECTION 3 – COMPASITION / INFORMATION ON INGREDIENTS.

<u>Chemicals Name</u>	<u>%</u>	<u>CAS No.</u>
Acrylamide	50%	79-06-1
Water	50%	7732-18-5

SYNONYMS : Acrylamide (DSL, EINECS, ENCS, ECL, PICCS) ; 2-Propene amide (TSCA, DSL, AICS, ECL, SWISS, PICCS, NZIoC)

SETION 4 - FIRST AID MEASURES.

INHALATION :

Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Keep the affected person warm and at rest. Get medical attention immediately.

EYE CONTACT :

Immediately flush eyes with plenty of water for several minutes and get medical attention. Part eyelids with fingers to assure complete flushing. Check for and remove contact lenses if easily possible.

SKIN CONTACT :

Immediately remove contaminated clothing and shoes. Flush skin IMMEDIATELY and thoroughly. If not removed promptly, this material may cause serious skin damage. Get medical attention immediately.



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INGESTION :

Rinse mouth with water. Induce vomiting as directed by medical personnel. Get medical attention immediately. Never give anything by mouth to an unconscious or convulsing person. Keep the affected person warm and at rest.

MOST IMPORTANT SYMPTOMS/EFFECTS, ACUTE AND DELAYED :

This product is irritating to eye. Respiratory system and skin. Inflammation of mucous membrane of eyes. Nose, and disturbance, tremor, confusion, hypersensitivity, difficulty in speech and other symptoms may occur after inhalation or absorbed through the skin.

SPECIAL PROTECTIVE ACTIONS FOR FRIST-AIDERS :

Wear appropriate personal protective equipment such as respirator, goggles, protective gloves, etc.

NOTE TO PHYSICIAN :

Threat symptomatically.

SECTION 5 - FIRE FIGHTING MEASURES.

EXTINGUISHING MEDIA : water jet, water fog.

UNSUITABLE EXTINGUISHING MEDIA : Not specified.

SPECIAL HAZARDS :

Emits toxic fumes under fire conditions.

FIRE FIGHTING INSTRUCTIONS.

Keep unnecessary and unprotected personnel away, Shut off supply if possible. Remove containers to safe place if possible, Keep surrounding areas cool by spraying water. Fight fire from an upwind position.

FIRE FIGTHING EQUIPMENT :

Respiratory and eye protection required for fire-fighting personnel. Full protective equipment and self-contained breathing apparatus (SCBA) should be used for all indoor fires and any significant outdoor fires.

SECTION 6 – ACCIDENTAL RELEASE MEASURES.

PERSONIL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES :

Evacuate immediately area. Warn personnel of fire, explosion and health hazard.



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Keep unnecessary and unprotected personnel away. Wear appropriate personal protective equipment as specified in section 8. Keep upwind, evacuate downwind.

ENVIROMENTAL PRECUATIONS :

Warn and evacuate the neighborhood as necessary.

Do not let this chemical enter the environment. Do not flush into sewer, river or any body of water.

CONTAIMENT/CLEAN-UP METHODS :

Absorb or cover with dry earth, sand or other non-combustible material and transfer to sealable containers. Large spills : Dike far ahead of liquid spill for later disposal. Stop leak if possible without personal risk. Avoid runoff to sewer or waterways.

SECTION 7 – HANDLING AND STORAGE.

HANDLING :

Technical Measures :

Use only in well-ventilated area. Avoid contact with eyes, skin, and clothing. Avoid ingestion and inhalation. Wear appropriate personal protective equipment. Provide hand and eye wash station near work area. Wash thoroughly after handling.

Ventilation :

Use only under local exhaust or general ventilation.

Safe Handling Advice :

Do not handle until all safety precautions have been read and understood. Prevent leak and spill. Avoid vapor formation. Do not fall, drop, shock or drag the container. Avoid contact with eye, skin or clothing. Avoid inhalation and ingestion. Use only in well-ventilated area or outdoors.

STORAGE :

Storage Conditions :

Protect from direct sunlight. Store in the room by temperature is $\leq 30^{\circ}\text{C}$, and well-ventilated area. Keep container tightly closed. Keep away from strong oxidizers. Keep locked up. Store in a segregated and approved area,

Packing Materials :

Use UN approved containers or containers approved by local and national authorities.



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SECTION – 8 – EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE LIMITS :

ACGIH-TLV : 0.03 mg/m³ (TWA) Inhalable Skin OSHA-PEL : 0.3 mg/m³ (TWA) Skin

ENGINEERING CONTROLS :

Provide general ventilation. Use closed system or local exhaust ventilation. Provide safety shower and eye wash station near work area.

PERSONAL PROTECTIVE EQUIPMENT

Respiratory protection : Chemical cartridge respirator with organic vapor cartridge,
 Hand Protection : Protective gloves.
 Eye Protection : Safety glasses, goggles, face shield.
 Skin and body protection : Safety helmet, protective clothing, safety boots, apron.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE : Liquid.
 APPEARANCE : Colorless clear liquid.
 ODOR : Odorless, transparency
 PH : 6.5 ~ 7.0
 BOILING POINT : 105.5 °C
 CRYSTALIZATION POINT : 12 ~ 13 °C
 FLASH POINT : Not flammable
 AUTOIGNATION TEMP : Not available
 FLAMMABLE LIMITS : Not available
 VAPOR PRESSURE : (MM Hg) Similar to H₂O
 VAPOR DENSITY : (Air =1) Similar to H₂O
 SPECIFIC GRAVITY : 1.036 g / cm³ at 30 °C
 SOLUBILITY : In Water All proportions.

SECTION 10 – STABILITY AND REACTIVITY

CHEMICAL STABILITY : Stable for normal, storage and handling.
 HAZARDOUS REACTIONS : Reaction violently with strong oxidizers.
 MATERIAL TO AVOID : Acids, alkalis, peroxide, oxidizing reagent,
 reducing reagent steel may react or initiate polymerization.
 CONDITION TO AVOID : Heating to more than 60 °C or exposing to
 direct sunlight may cause polymerization.



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HAZARDOUS DECOMPOSITION PRODUCTS : Not available.

8

SECTION 11 – TOXICOLOGICAL INFORMATION

ACUTE TOXICITY :

Oral rat LD 50	107 ~ 170 mg/kg	(Category 3)
Exposure limit of material	0.3 mg/kg	(Category 3)
Inhalation	Not available	(Classification not possible)

SKIN CORROSION/IRRITATION :

Causes skin irritation (Category 3)

SERIOUS EYE DAMAGE/EYE IRRITATION :

Causes serious eye irritation (Category 3)

RESPIRATORY SENSITIZATION :

Not available. (Classification not possible)

SKIN SENSITIZATION :

May cause allergic skin reaction (Category 1)

CARCINOGENICITY of Material:

Human (IARC) (Category 1B)

REPRODUCTIVE EFECTS of MATERIAL :

Reproductive toxicity is reported in animals

ASPIRATION HAZARD :

Not available (Classification not possible)

The following information is for the components of this product (Acrylamide),

ACUTE TOXICITY :

Oral rat LD50 0.17 g/kg.
 Expose limit of Material LD50 0.3 mg/kg.
 Inhalation Not available.



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SKIN CORROSION/IRRITATION :
Skin irritation human, rabbit Mild

9

SERIOUS EYE DAMAGE/EYE IRRITATION :
Eye irritation was observed but disappeared during the observation period of 21 days.

RESPIRATORY SENSITIZATION : Not available.

SKIN SENSITIZATION : Guinea pig positive

CARCINOGENICITY :
IARC : Group 2A
NTP : Reasonably anticipated carcinogen.
ACGIH : A3

REPRODUCTIVE TOXICITY :
In rat 70 day oral study : decreased number of fetuses per brood, decline in the ability of males to impregnate females, increased incidence of pre implantation embryo death, etc.

ASPIRATION HAZARD : Not available.

SECTION 12 – ECOLOGICAL INFORMATION.

HAZARDOUS TO THE AQUATIC ENVIRONMENT (ACUTE) :
Harmful to aquatic life. (Category 3)

HAZARDOUS TO THE AQUATIC ENVIRONMENT (CHRONIC) :
(Not classified)

Ecological information of some components is known as follows :
(ACRYLAMIDE)
ECOTOXICITY :

Alga EC50 16.9 mg/l/72 hr.



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PERISITENCE / DEGRADABILITY :

Biodegradable:(BOD=70%)

BIOACCUMULATION POTENTIAL :

Low (Estimate from log kow = -0.67)

10

SECTION 13 – DISPOSAL CONSIDERATIONS

WASTE FROM RESIDUES :

Whatever cannot be saved for recovery may be burned in an approved incinerator or disposed in approved waste facility.

Ensure compliance with local, state, federal and national regulation.

CONTAMINATED PACKING :

Empty the container completely before disposal,

SECTION 14 – TRANSPORT INFORMATION

Hazard class : 6.1
 UN number : UN 3426
 Packing group : III
 Proper shipping name : ACRYLAMIDE SOLUTION

SECTION 15 - REGULATORY INFORMATION

INVENTORY STATUS

X : All components of this product comply with the inventory requirements administered by the governing country (s).

United States : TSCA Inventory (X)
 European Union : EINECS (X) ELINCS () NLP ()
 Australia : AICS (X)
 Canada : DSL (X) NDSL ()
 China : IECSC (X)



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Korea : KECI (X)
New Zealand : NZIoC (X)
Philippine : PICCS (X)

SECTION 16 – OTHER INFORMATION

References :

11

- 1) Book of Dangerous Goods (Gunter Hommel, 1991)
- 2) GHS Classifications of Regulated Chemicals (National Institute of Technology and Evaluation, Japan, 2007) http://www.safe.nite.go.jp/english/ghs_index.html
- 3) International Chemical Safety Cards (ICSC)
- 4) In-house data

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.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.