

MATERIAL SAFETY DATA SHEET

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REVISION DATE:	30/VI/2002
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DATASHEET ID	NMA48-05

1. IDENTIFICATION OF THE PRODUCT AND THE COMPANY

Product name : FLOCRYL™ NMA 48

Company : ADAKEM KİMYA
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Kat:8 Daire:51 Pendik / İstanbul - TÜRKİYE

Telephone number : +90 216 330 92 00 **Fax :** +90 216 331 91 81

24-hour emergency telephone number : International: 112

Product Use : Industrial Raw Material.

2. COMPOSITION/INFORMATION ON INGREDIENTS

Identification of the preparation : N-Methylolacrylamide in aqueous solution

Regulated components	Classification	CAS-No	Weight %
N-Methylolacrylamide	T, R38, R48/23/24/25	924-42-5	40.0 - 44.0
Formaldehyde	T; R23/24/25 C; R34 Carc. Cat.3; R40 Xi; R43	50-00-0	< 2.0
Acrylamide	Carc. Cat. 2; R45 Muta. Cat. 2; R46 Repr. Cat. 3; R62 T; R25-48/23/24/25 Xn; R20/21 Xi; R36/38 R43	79-06-1	< 5.0

3. HAZARDS IDENTIFICATION

May cause cancer. Toxic: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed. Harmful in contact with skin and if swallowed. May cause heritable genetic damage. Irritating for skin and eyes.

4. FIRST AID MEASURES

Never give fluids or induce vomiting if patient is unconscious or is having convulsions.

Note to Physician : No specific antidote. Supportive care. Treatment based on judgement of the physician in response to reactions of the patient.

Inhalation : Remove to fresh air if effects occur. Consult a physician.

- Skin contact :** In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Call a physician if irritation persists. Wash clothing before reuse. Destroy contaminated shoes.
- Eye contact :** Flush eyes with plenty of water. In case of persistent eye irritation, consult a physician.
- Ingestion :** If swallowed, induce vomiting immediately as directed by medical personnel. Consult medical personnel. Never give anything by mouth to an unconscious person.

5. FIRE-FIGHTING MEASURES

- Suitable extinguishing media :** Will not burn until water is evaporated. Water fog or fine spray. Carbon dioxide. Alcohol resistant foam. Dry chemical.
- Fire extinguishing agents to avoid :** None.
- Special fire-fighting precautions :** Hazardous Combustion Products : Ammonia.
- Special protective equipment for firefighters :** Wear positive-pressure self-contained breathing apparatus and protective fire fighting clothing (includes fire fighting helmet, coat, pants, boots and gloves).

6. ACCIDENTAL RELEASE MEASURES

- Personal precautions :** Wear adequate personal protective equipment, see Section 8, *Exposure Controls/Personal Protection*.
- Environmental precautions :** Prevent contamination of surface and groundwater.
- Methods for cleaning up :** Small spills: Cover and soak up with a suitable absorbent material. Large spills: Do not allow solution to dry. Contain with dike. Pump into suitable and properly labelled containers. One-to-one (volume) dilution is suitable to reduce reactivity. Residues: Flush away with large quantities of water.

7. HANDLING AND STORAGE

- Handling :** Use non-sparking equipment or tools. Special note: The rule of industrial handling is to "prevent essentially all contact" with acrylamide or its solutions, whether by ingestion, inhalation, or skin contact.
- Storage :** Avoid freezing. The recommended storage temperature is 5-30°C. To prevent from oxygen loss, do not blanket or purge with an inert gas..

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Occupational Exposure Limits :

Acrylamide (solution)

VME (France) = 0.3 mg/m³
 OEL (UK) = 0.3 mg/m³
 OSHA (USA) = 0.3 mg/m³ (skin)
 ACGIH (USA) = 0.03 mg/m³
 TRK (Germany) = 0.03 mg/m³ (skin)
 GCM (Germany) = Category 2

Formaldehyde (solution)

MAK = 0.6 mg/m³ (skin) - Germany
 (I)(S)(IIIB)

Engineering measures to reduce exposure:

Provide general and/or local exhaust ventilation to control airborne levels below the exposure guidelines.

Personal protection equipment

- Respiratory protection :

Atmospheric levels should be maintained below the exposure guideline. When respiratory protection is required for certain operations, use an approved air-purifying respirator. For emergency and other conditions where the exposure guideline may be greatly exceeded, use an approved positive-pressure self-contained breathing apparatus or positive-pressure airline with auxiliary self-contained air supply. In misty atmospheres, use an approved mist respirator. Test data indicate that organic vapour respirators are effective types of air-purifying respirators.

- Eye protection :

Wear a face-shield which allows use of chemical goggles, or wear a full-face respirator, to protect face and eyes when there is any likelihood of splashes. Use chemical goggles.

- Skin and body protection :

Use protective clothing impervious to this material. Selection of specific items such as gloves, boots, apron or full body-suit will depend on operation. Permeation test data indicate that the following are effective protective clothing materials: Polyethylene. Butyl rubber. Nitrile/butadiene rubber. Neoprene. Safety shower should be located in immediate work area. Remove contaminated clothing immediately, wash skin area with soap and water, and launder clothing before reuse. Contaminated leather items, such as shoes, belts and watch bands, should be removed and destroyed.

9. PHYSICAL AND CHEMICAL PROPERTIES

Form :	liquid
Colour :	Clear to slightly yellowish liquid
Odour :	none
pH :	6.0 - 7.0
Melting point (°C) :	-10 (crystallisation)

Boiling point (°C) :	100
Flash point (°C) :	Not applicable
Autoignition temperature (°C) :	No data available
Vapour pressure (mm Hg) :	23 (@25°C)
Bulk density :	1.1 g/cm ³ (@ 25°C/77°F)
Water solubility :	completely soluble

10. STABILITY AND REACTIVITY

Stability :	Hazardous polymerization may occur.
Conditions to avoid :	Avoid extremes of temperature. Avoid temperatures above 50°C. Do not heat with steam.
Materials to avoid :	Acids. Bases. Oxidising agents. Reducing agents. Initiators.
Hazardous decomposition products :	Neat acrylamide will decompose, releasing ammonia, hydrogen and carbon monoxide.

11. TOXICOLOGICAL INFORMATION

Acute toxicity

- **Oral :** Single dose oral toxicity is considered to be moderate. The oral LD50 for rats is estimated at > 500 mg/kg. Small amounts swallowed incidental to normal handling operations may cause serious injury; swallowing amounts larger than that may cause death.
- **Dermal :** A single prolonged exposure may result in the material being absorbed in harmful amounts. The LD50 for skin absorption in rabbits is estimated at > 1800 mg/kg. Excessive exposure may cause neurological signs and symptoms. Excessive exposure may cause peripheral neuropathy (injury to nerves of the extremities). Has caused allergic skin reactions when tested in guinea pigs. May cause allergic skin reaction in susceptible individuals.
- **Inhalation :** A single brief (minutes) inhalation exposure to vapour, mist or dust is not likely to cause adverse effects. LC50/inhalation/1h/rat > 24 mg/L.

Irritation

- **Skin :** A sign of excessive skin exposure is the peeling of skin. Short single exposure not likely to cause significant skin irritation. Repeated exposure may cause skin irritation.
- **Eyes :** May cause slight eye irritation. May cause slight corneal injury.

Other information : Acrylamide

Developmental/Reproductive Effects: Birth defects are unlikely. Exposures having no effects on the mother should have no effect on the fetus. Did not cause birth defects in animals; other effects were seen in the fetus only at doses which caused toxic effects to the mother. Repeated excessive exposures to high amounts may cause effects on testes and male reproduction.

Mutagenicity: In vitro mutagenicity tests were negative in some cases and positive in other cases. Animal mutagenicity studies were negative in some cases and positive in other cases.

Carcinogenicity: Has been shown to cause cancer in laboratory animals. Acrylamide has been classified as category 2 carcinogen and a category 2 mutagen by the EEC.

12. ECOLOGICAL INFORMATION**Acute aquatic toxicity**

- **Fish :** LC50/96h/rainbow trout > 800 mg/L
- **Daphnids :** No data available.
- **Algae :** No data available.

Environmental fate

Biochemical oxygen demand (BOD) = 52% (28-day)

- **Bioaccumulation :** No appreciable volatilization from water to air is expected. No bioconcentration expected due to high water solubility.

13. DISPOSAL CONSIDERATIONS

Waste from residues / unused products : Remove spilled material to biological treatment facility. Incineration is acceptable and the preferred method of disposal, however, nitrogen oxides emission controls may be required to meet environmental regulations.

Contaminated packaging : In accordance with local and national regulations.

14. TRANSPORT INFORMATION

ICAO/IATA	Proper shipping name :	AVIATION REGULATED LIQUID, N.O.S.	
	Hazard class :	9	Packing group : III
	Sub Class :	-	UN Number : 3334
	Transport label :	Miscellaneous	

Remarks : Contains : Acrylamide, formaldehyde

15. REGULATORY INFORMATION**Symbol(s) :**

T - Toxic

R -phrase(s) :

R20/21/22 - Also harmful by inhalation, in contact with skin and if swallowed.

R43 - May cause sensitization by skin contact.

R48/23/24/25 - Toxic: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed.

R45 - May cause cancer.

R46 - May cause heritable genetic damage.

S -phrase(s) :

S53 - Avoid exposure - obtain special instructions before use.

S51 - Use only in well ventilated areas

S36 - Wear suitable protective clothing

S26 - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice

S44 - If you feel unwell, seek medical advice (show the label where possible).

Inventory status :**EINECS (Europe) :** All components listed on inventory**TSCA (USA) :** All components listed on inventory**DSL (Canada) :** All components listed on inventory**AICS (Australia) :** All components listed on inventory**ENCS (Japan) :** All components listed on inventory**ECL (Korea) :** All components listed on inventory**IECSC (China) :** All components listed on inventory**PICCS (Philippines) :** All components listed on inventory**16. OTHER INFORMATION****Further information :**

Product name :

FLOCRYL™ NMA 48

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This MSDS was prepared in accordance with the following:

Council Directive 92/32/EEC of 30 April 1992 amending for the seventh time Directive 67/548/EEC on the approximation of the laws, regulations and administrative provisions relating to the classification, packaging and labelling of dangerous substances and all subsequent adaptations to technical progress.

Directive 1999/45/EC of the European Parliament and of the Council of 31 May 1999 concerning the approximation of the laws, regulations and administrative provisions of the Member States relating to the classification, packaging and labelling of dangerous preparations.

Commission Directive 2001/58/EC of 27 July 2001 amending for the second time Directive 91/155/EEC defining and laying down the detailed arrangements for the system of specific information relating to dangerous preparations in implementation of Article 14 of European Parliament and Council Directive 1999/45/EC and relating to dangerous substances in implementation of Article 27 of Council Directive 67/548/EEC (safety data sheets).

ISO 11014-1: Material Safety Data Sheet for Chemical Products.

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.

FLOCRYL™ NMA 48

Appearance	Clear to slightly yellowish liquid
Specific gravity	1.08
Total monomeric content (%)	48.0
NMA content (%)	40.0 - 44.0
Acrylamide content (%)	< 5.0
Copper content (ppm)	0.5 - 2.0
E.M.H.Q. content (ppm)	50.0 - 70.0
pH	6.0 - 7.0
Storage temperature (°C)	0 - 30
Shelf life (months) *	6

* When stored inside a building at a stable temperature between 5° and 30°C.

Packing sizes

Drums	200 kg
I.B.C.	1000 kg
Other dimensions	On request

The data in this Technical Data Sheet is provided for information only. It is correct to the best of our knowledge, information and belief at the date of its publication. It does not constitute a specification and no liability is assumed, nor freedom from any existing patents.


SPECIFICATION PROPOSAL

PRODUCT NAME : FLOCRYL NMA 48

GENERIC NAME : N-methylolacrylamide

PRODUCT DESCRIPTION : Clear to slightly yellowish solution

	UNITS	SPECIFICATION	QC TEST
N-Methylolacrylamide	%	40.0 - 44.0	6125 A
Acrylamide	%	0 - 5.0	6205 A
Free Formaldehyde	%	2.00 maxi	6210 A
pH		6.0 - 7.0	6130 A
Color	apha	50 maxi	6500 A

SNF APPROBATION	CUSTOMER APPROBATION
<p>VERSION : 05 DATE : 11/06/02 CONTROLLED BY: A.BAUDON RESPONSIBLE : R.HUND</p> 	<p>CUSTOMER NAME : DATE : RESPONSIBLE :</p>