

SOLVENT A/402/B

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SECTION 1 - IDENTIFICATION OF THE PRODUCT AND OF THE COMPANY

1.1 – PRODUCT IDENTIFICATION

Product trade name: SOLVENT A/402/B

Product code: PSOA402.....

1.2 – PRODUCT TYPE AND USE

Product type: organic solvents mixture

Use: organic phosphating system - metal pre-treatment before painting

1.3 – COMPANY IDENTIFICATION

PAI-KOR s.r.l.

via Tecchione, 7

20098 S. Giuliano Milanese (MI) ITALY

Tel. ++39 02.9880411 r.a. - Telefax ++39 02.9880765

www.paikor.com - e-mail: paikor@paikor.it

SECTION 2 - COMPOSITION / INFORMATION ON INGREDIENTS

LIST OF HAZARDOUS INGREDIENTS AS PER DIR. 67/548/CEE, 1999/45/CE AND FOLLOWING EMENDAMENTS

CHEMICAL NAME	CONCENTRATION %	HAZARD SYMBOLS (*)	RISK PHRASES (*)	CAS NUMBER	EINECS NUMBER
N-BUTHANOL	19.000 - 21.000	Xn Xi	R22 R37/38; R41 R67	71-36-3	200-751-6
BUTHYL ACETATE	73.000 - 77.000	===	R66; R67	123-86-4	204-658-1
3-BUTHOXY-2- PROPANOL	4.000 - 6.000	Xi	R36/38	5131-66-8	225-878-4

See section 8 for other substances with acknowledge Occupational Exposure Limits

(*) See section. 16

SECTION 3 - HAZARDS IDENTIFICATION

HAZARD NATURE – HAZARDS IDENTIFICATION

The product is classified as irritant for skin, may cause serious eyes damages and flammable.

- INHALATION

Avoid inhalation. Solvent's vapours high concentration rates may have anaesthetic and narcotic effects and may cause irritation of the respiratory tract, weariness, lack of co-ordination, headache, drowsiness, dizziness, nausea

- SKIN CONTACT

Irritant. Avoid contact. The solvents in the product have skin degreasing properties. Repeated and prolonged exposure may cause irritation and dermatitis. Vapours may be absorbed by skin in significant toxicological quantity. Repeated exposure may cause skin dryness or cracking.

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SECTION 3 - HAZARDS IDENTIFICATION

- CONTACT WITH EYES

Irritant. Avoid contact with eyes. The product may cause aches, burning sensations and irritation. In particular isobutanol is classified as a product that may cause serious damage to eye.

- INGESTION

Do not swallow. N-butanol is classified as harmful by ingestion.

SECTION 4 – FIRST AID MEASURES

INHALATION

Move the patient from the exposure area. Keep him warm and at rest in a well-ventilated place. In case of disorders call a physician. In case of respiratory failure, give artificial respiration

SKIN CONTACT

Remove contaminated clothes and shoes immediately; rinse thoroughly with running water and soap if possible. If irritation persists, call a physician.

EYE CONTACT

Irrigate with running water immediately, keeping eyelids for at least 15 min. Do not contaminate the not injured eye. Rinse, if necessary with ophthalmic solution. Seek medical assistance.

INGESTION

DO NOT INDUCE VOMITING.

SEEK MEDICAL ADVICE IMMEDIATELY and provide the Safety Data Sheet.

If the patient is conscious, it is possible to rinse its mouth with water.

SECTION 5 - FIRE FIGHTING MEASURES

FLAMMABILITY

The product is classified as flammable

SUITABLE EXTINGUISHING EQUIPMENT

CO₂, dry chemicals, alcohol resistant foam, atomised water. Do not use water jets. Sand or earth is suitable to extinguish small fires..

SPECIAL PROCEDURES / PRECAUTIONS

Keep unauthorised people away. Spray water to keep the adjacent containers cool. Do not breath the fumes in. Use breathing apparatuses and fire protection suits. Firemen must work on the windward side.

SPECIAL HAZARDS

Vapours may explode if ignited in a confined area. They are heavier than air and expand in into the soil; therefore they may cause a “flashback” ignition at a distance. Explosions may occur if the liquid penetrates into water drains or sewerage systems (notify the emergency service immediately).

HAZARDOUS COMBUSTION PRODUCTS

Unknown. An incomplete combustion may produce carbon oxide. Complete combustion will release carbon dioxide and water.

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SECTION 6 – ACCIDENTAL RELEASE MEASURES

SPILLING INTO SOIL OR WATER

Keep unauthorised people away. Extinguish free flames and remove ignition sources. Air the area. Do not smoke. Provide authorised staff with appropriate protection devices (see section 8). Stop spilling at the source. Notify the if the product penetrates into water streams, water drains or sewerage system or if it has contaminated soil and vegetation. Prevent from spreading by using earth, sand or sawdust. Transfer the spilt product into suitable metallic containers. If the spilling occurs into water, prevent from spreading if possible, and remove the spilt product from the surface as rapidly as possible by means of mechanical devices or of appropriate absorbing substances.

Seek for disposal advice in compliance with local legislation prescriptions.

SECTION 7 – HANDLING AND STORAGE

7.1 - HANDLING

Use in a well-ventilated area. Avoid contact with eyes, skin and inhalation of vapours or fumes. During work do not eat, drink or smoke. Keep away from foodstuffs. See also section 8. Stick to the following cleaning and sanitary regulations:

- have an accurate wash before any breaks;
- keep personal clothes separate from working clothes;
- change and wash accurately dirty clothes.

Vapours are heavier than air and may accumulate also in a dangerous way in holes, depressions, etc.

Connect installation to earth.

Use containers and tubes made of solvents resistant materials only. Mixed with the polymer of the organic phosphating system, use stainless steel AISI 304, PE (polyethylene) or PP (propylene) only; brief contacts with iron do not give problems, prolonged contacts may reduce the product efficiency.

7.2 – STORAGE

Store in a well-ventilated area away from sources of heat or ignition. Avoid direct exposure to sunlight. Keep containers tightly closed. Provide connection to earth. Avoid accumulation of electrostatic charges.

SECTION 8 – PERSONAL PROTECTION / EXPOSURE CONTROL

8.1 - OCCUPATIONAL EXPOSURE LIMITS

1 – ACGIH 2000 – American Conference of Governmental Industrial Hygienists

2 – MAK KOMMISSION (Germany)

3 – Not established (recommended value)

SUBSTANCE	1	2	3
N-BUTANOL	50ppm - 152mg/m3	100ppm - 300mg/m3	===
BUTYL ACETATE	150ppm - 713mg/m3	200ppm - 950mg/m3	===
3-BUTHOXY-2-PROPANOL	===	===	50ppm

8.2 – EXPOSURE CONTROL

ENGINEERING CONTROL MEASURE

Provide suitable aspiration installations. Ensure proper ventilation in the workshop where the product is used and stored.

RESPIRATORY PROTECTION

Provide appropriate respiratory protection, such as active carbon masks, if the exposure level can exceed the above mentioned limits.

SECTION 8 – PERSONAL PROTECTION / EXPOSURE CONTROL

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HANDS PROTECTION

Solvent-proof resistant gloves.

EYES PROTECTION

Protection goggles or face shields if there is the risk of accidental splashes.

SKIN PROTECTION

Wear suitable industrial protection clothes and, if appropriate, waterproof rubber overalls and chemical resistant safety shoes.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Physical state / aspect: transparent liquid

Odour: typical of the contained solvents

Specific weight (water = 1) at 20° C: 0.850 ± 0.050 Kg./lt

Vapour density 1 atm (air = 1): > 1

Boiling point / range: 116° C (starting point n-buthanol)

Flash point: 24° C

Explosion limit

(standard P and T% in volume):		LEL (*)	UEL (*)
(*) See section 16	N-BUTHANOL	LEL 1.40%	UEL 11.30%
	BUTHYL ACETATE	LEL 1.70%	UEL 7.60%
	3-BUTHOXY-2-PROPANOL	LEL 1.10%	UEL 8.40%

Solubility in water: limited

SECTION 10 – STABILITY AND REACTIVITY

STABILITY'

Stable under normal storage and use conditions.

CONDITIONS TO AVOID

Avoid heat, sparks, free flames, electric arcs. Accumulation of electrostatic charges

MATERIALS TO AVOID

Strong acids and basis, strong oxidising agents. Comburent materials.

HAZARDOUS DECOMPOSITION PRODUCTS

None known. See also section 5.

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SECTION 11 – TOXICOLOGICAL INFORMATION

Take into account the concentration of the single ingredients in order to evaluate the toxicological effects of the substance.

Information concerning some of the substances contained in the product is provided here below.

N-BUTHANOL

ACUTE TOXICITY

Inhalation: high concentrations of vapours may cause irritation of the respiratory tract, headache, dizziness, and narcosis. Poorly harmful. Not lethal for rats in an environment with atmosphere saturated with vapours for 8 h.

Ingestion: poorly harmful: oral LD50 rat = 0.8 – 4 g/kg

Skin contact: poorly harmful, cutaneous LD 50 on rabbits = 4.2 – 7.6 g/kg. May cause dermatitis and eczema. Irritating for the skin.

Contact with eyes: highly irritating by direct contact with the liquid. Irritating by contact with vapours.

CHRONIC TOXICITY:

High concentrations action sites, nervous system, maximum concentration free of effect: 50 ppm /various years.

GENOTOXICITY: globally inactive in in-vitro and in vivo tests

TOXICITY FOR REPRODUCTION: Fertility, absence of toxic effects on fertility, absence of toxic effects on foetal growth (in non toxic doses for the mother, rat).

BUTHYL ACETATE

ACUTE TOXICITY: Low degree of acute toxicity. L oral D50 oral rat > 4700 mg/kg. LC50 for inhalation (rat) 9.6-29.2 mg/l/4h. LD50 dermal (rabbit) > 5000 mg/kg

EYES IRRITATING POWER: Ocular single applications in rabbits caused conjunctival irritations and corneal transitory irritations (punctuation seediness/ epithelial small lesions)

SKIN IRRITATING POWER: A single semi-occlusive application for 48 hours, on the intact skin of rabbits provoked least signs of irritation (erythemas/oedemas average points < 2).

CUTANEOUS SENSITISATION: Cases of cutaneous sensitisation are not known.

SUB-ACUTE/ SUB-CHRONIC TOXICITY: No collateral effects caused by a prolonged long period exposure have been documented.

GENOTOXICITY: No mutagenic activity in bacterial cells with or without metabolic activation has been noticed.

REPRODUCTIVE / DEVELOPMENT TOXICITY: Convincing evidences of such effects do not exist.

3-BOTHOXY-2-PROPANOL

ACUTE TOXICITY

- Ingestion: the toxicity of a single oral dose is considered low. The oral LD50 for rats is 3,300 mg/kg. Small quantities incidentally swallowed during the normal product handling operations should not cause damages; however, the ingestion of larger quantities could cause damages.

- Skin contact: a single and prolonged exposure does not probably cause absorption of the substance through the skin in harmful quantities. The LD50 for cutaneous absorption in rats is > 2,000 mg/kg.

- Inhalation: a single and brief (minutes) exposure to inhalation is unlikely to cause negative effects. Single, prolonged (hours) and excessive exposures to inhalation may cause negative effects. Excessive exposure could cause effects on the central nervous system

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SECTION 11 – TOXICOLOGICAL INFORMATION

3-BOTHOXY-2-PROPANOL (continue)

IRRITATION

- Skin: a prolonged or repeated exposure may cause irritation to the skin, even burns. The liquid causes burning sensations and itching in the point of contact.
- Eyes: it may cause moderate irritation to eyes; it may cause moderate corneal injuries.
- Inhalation: excessive exposure may cause irritation to the higher respiratory tract.

EFFECTS ON GROWTH AND ON THE REPRODUCTIVE SYSTEM

In studies on animals, it proved not to interfere with reproduction. Deformities at birth are unlikely. Exposures that do not have negative effects on the mother should not have effects on the foetus.

MUTAGENICITY

Mutagenicity tests in "vitro" provided negative results.

OTHER INFORMATION

Observations on animals include liver damages deriving from repeated oral intakes.

SECTION 12 – ECOLOGICAL INFORMATION

Always use the product following the best working practice and avoid dispersion of the product in the environment..

Information concerning some of the substances contained in the product is provided here below.

N-BUTHANOL

MOBILITY: evaporation, T1/2 life = 5.9 h

PERSISTENCE/DEGRADABILITY:

In water: easily biodegradable, 98% after 149 g (OECD 301E)

In air: degradation of radicals OH: t1/2 life 22.6 h

In soil or sediments: low absorption log Koc = 1.85

BIOACCUMULATION: practically not bioaccumulative, log Pow = 0.88

AQUATIC TOXICITY

Practically not harmful to fishes, CE (I) 50, 48 h = 1983 mg/l (DIN 38412)

Bacteria: CE10, 16 h (Pseudomonas Putida) = 2250 mg/l

Bacteria: Microtox Test: CE 50, 5 min (Photobacterium phosphoreum) = 2041 mg/l

Long-term toxicity: Alga (inhibition of growth): CI 3,8 g (Secenedesmus quadricauda) = 875 mg/

BUTHYL ACETATE

MOBILITY: The product is volatile/gaseous and it separates in the gaseous phase. The product dissolves rapidly in water. If liberated in the ground it evaporates rapidly.

PERSISTENCE/ DEGRADABILITY: The product is easily biodegradable. BOD 28= 98% of ThD. The photochemical degradation in the air is rapid.

BIOACCUMULATION: The product is not supposed to generate bioaccumulation phenomena: Expected biological concentration factor = > 4.0.

ECOTOXICITY:

Tests on the following species have given:

96 h LD50> 184 mg/l ([anguella])

96 h LD50> 95 mg/l (Iepomidi)

96 h LD50> 18 mg/l (ciprinidi)

24 h EC50 205 mg/l (daphnia)

72 h EC50 674 mg/l (Algae)

The product should not have negative effects on biological treatments.

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SECTION 12 – ECOLOGICAL INFORMATION

3-BUTHOXY-2-PROPANOL

MOBILITY AND POTENTIAL OF BIOACCUMULATION

The logarithm of the ottanol / water (log/Pow) ratio coefficient is estimated to be 1.15. Material is not expected to cause negative long-term effects in the aquatic environment (log Pow < 3.0).

DEGRADATION

Biodegradation reached in the Modified OECD Screening test after 28 days is 90%. Material easily biodegradable in the environment (BOD 28> 60%).

AQUATIC TOXICITY

The material is not harmful for aquatic organisms (LC50/EC50/IC50 > 100 mg/l). LC50 acute for Poecilia reticulata is 560-1000 mg/l. EC50 acute for Daphnia magna is > 1.000 [mg]/ l

SECTION 13 – DISPOSAL CONSIDERATIONS

Recover the product as much as possible. Dispose of in incineration or disposal installations in compliance with the applicable local and national regulations.

Disposal in water streams, water drains, sewerage systems or in ground is an illegal procedure.

EMPTY CONTAINERS NOT COMPLETELY DRY: since empty containers may contain residues of product (liquid or vapour), follow all prescriptions reported in this security data sheets and on the labels, even when they are completely empty and dry. Residues of vapours in empty containers may explode if ignited. Do not perform cutting, piercing, grinding or welding operations near the container nor on the container itself.

Remove labels from empty and reclaimed containers before disposal.

SECTION 14 – TRANSPORT INFORMATION

ROAD AND RAILWAY TRANSPORT (ADR / RID)

Proper shipping name: SOLVENT A/402/B

UN number: 1993

Class: 3

Classification code:: F1

Packing group: III

Hazard identification number: 30

Label: 3

Special provision: 274 640 E

SEA TRANSPORT (IMO IMDG)

Proper shipping name: SOLVENT A/402/B

UN number: 1993

Class: 3

Packaging group: III

Special provision: 223 274 944 955

EmS number: F-E-S-E

Hazard symbol: 3

Storing: Category A

Marine pollutant NO

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SECTION 15 – REGULATORY INFORMATION

LABELLING AS PER ECC REGULATIONS 67/548/CEE, 1999/45/CE, AND ITALIAN D.M. 28.01.1992, D.M. 16.02.1993 N. 50 AND FOLLOWING EMENDAMENTS E/O MODIFICAZIONI

HAZARD SYMBOLS

Xi = irritant

RISKS PHRASES

R10: flammable

R38: irritating to skin

R41: risks of serious damages to eyes

R66: vapours may cause drowsiness and dizziness

R67: repeated exposure may cause skin dryness or cracking

SAFETY PRECAUTION PHRASES

S16: conservare lontano da fiamme e scintille. Non fumare

S24/25: avoid contact with skin and eyes

THE PRODUCTS ALSO CONTAINS: ALCOHOLS, ACETATES

SECTION 16 – - OTHER INFORMATION

HAZARD SYMBOLS

T = toxic

C = corrosive

Xn = harmful

Xi = irritant

RISKS PHRASES

R22: harmful by ingestion

R34: it causes burns

R41: risks of serious damages to eyes

R66: repeated exposure may cause skin dryness or cracking

R67: vapours may cause drowsiness and dizziness R41: risk of serious damage to eyes

COMBINATION OF RISKS PHRASES

R20/21: harmful by ingestion and in contact with skin

R37/38: irritating to respiratory system and skin

NOTE QUALIFICATIONS:	EQ = equal	N/AP = not applicable
	AP = approximately	N/DA = data not available
	TR = traces	LEL = lower explosion limit
	N/D = information not avail	UEL = lower explosion limit

The data contained in this Safety Data Sheet comply with the regulation in force and correspond to our current knowledge on the subject. The purpose of this document is to protect the health and safety of industrial and commercial users, capable of understanding and acting according to the information provided. Please make sure that any appropriate person in your company, who is able to handle this data is aware of them. The information reported in the MSDS is not aimed at ensuring any specific property of the products themselves and represent neither a guarantee nor a technical specification of the supplied products