

1 Identification

- **Product identifier**
 - Product number TV80
 - Trade name: **HARDENER FOR POLYESTER**
 - Application of the substance / the mixture For professional use
- **Details of the supplier of the safety data sheet**
 - **Manufacturer/Supplier:**
IVM Chemicals Srl
Viale della Stazione 3 -27020 Parona (PV)Italy -Tel +39 038425441
 - **Information department:**
Environmental Health and safety office
hseoffice@ivmchemicals.com
 - **Emergency telephone number:**
ChemTel Expert Assistance Hotline/SDS Fax Access by dialing 1-800-255-3924 or for International +1-813-248-0585.

2 Hazard(s) identification

- **Classification of the substance or mixture**
Organic Peroxides - Type D H242 Heating may cause a fire.
Acute Toxicity - Oral 4 H302 Harmful if swallowed.
Acute Toxicity - Inhalation 4 H332 Harmful if inhaled.
Skin Corrosion 1B H314 Causes severe skin burns and eye damage.
Eye Damage 1 H318 Causes serious eye damage.
- **Label elements**
 - **GHS label elements**
The product is classified and labeled according to the Globally Harmonized System (GHS).
 - **Hazard pictograms**



- **Signal word** Danger
- **Hazard-determining components of labeling:**
dimethyl phthalate
2-Butanone, peroxide
- **Hazard statements**
H242 Heating may cause a fire.
H302+H332 Harmful if swallowed or if inhaled.
H314 Causes severe skin burns and eye damage.
- **Precautionary statements**
P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P234 Keep only in original container.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P303+P361+P353 If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
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/doctor.

(Contd. on page 2)

Product number TV80
Trade name: HARDENER FOR POLYESTER

(Contd. of page 1)

Classification system:

· **NFPA ratings (scale 0 - 4)**



Health = 3
Fire = 3
Reactivity = 0

The substance possesses oxidizing properties.

· **HMIS-ratings (scale 0 - 4)**



Health = *3
Fire = 3
Reactivity = 0

3 Composition/information on ingredients

Chemical characterization: Mixtures

· **Description:** Mixture: consisting of the following components.

Dangerous components:

131-11-3	dimethyl phthalate	50-74.99%
1338-23-4	2-Butanone, peroxide <ul style="list-style-type: none"> ⚠ Organic Peroxides - Type D, H242 ⚠ Skin Corrosion 1B, H314; Eye Damage 1, H318 ⚠ Acute Toxicity - Oral 4, H302; Acute Toxicity - Inhalation 4, H332 	30-39.99%
78-93-3	butanone <ul style="list-style-type: none"> ⚠ Flammable Liquids 2, H225 ⚠ Eye Irritation 2A, H319; Specific Target Organ Toxicity - Single Exposure 3, H336 	2.5-4.99%

4 First-aid measures

Description of first aid measures

General information:

Immediately remove any clothing soiled by the product.

Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

personal protective equipment for first aid responders is recommended. (please see section 8)

After inhalation:

Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.

In case of unconsciousness place patient stably in side position for transportation.

After skin contact: Immediately wash with water and soap and rinse thoroughly.

After eye contact:

Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.

After swallowing:

Do not induce vomiting; immediately call for medical help.

Immediately call a doctor.

Drink copious amounts of water and provide fresh air. Immediately call a doctor.

(Contd. on page 3)

Product number TV80
Trade name: HARDENER FOR POLYESTER

(Contd. of page 2)

- **Information for doctor:**
 - **Most important symptoms and effects, both acute and delayed**
 For symptoms and effects caused by substances, refer to Section 11.
 - **Indication of any immediate medical attention and special treatment needed**
 No further relevant information available.

5 Fire-fighting measures

- **Extinguishing media**
 - **Suitable extinguishing agents:**
 CO₂, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
 - **For safety reasons unsuitable extinguishing agents:**
 Do not use a jet water stream as it may scatter and spread fire.
- **Special hazards arising from the substance or mixture**
 In case of fire, the following can be released:
 Nitrogen oxides (NO_x)
 Carbon monoxide (CO)
- **Advice for firefighters**
 Cool by spraying with water the containers to prevent product decomposition and the development of substances potentially hazardous for health and also, in the case of closed containers exposed to flames to prevent explosions.
 - **Protective equipment:**
 Hardhat with visor, fireproof clothing, suitable gloves and if necessary respiratory protective device.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
 Wear protective equipment. Keep unprotected persons away.
 Ensure adequate ventilation
 Keep away from ignition sources
- **Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**
 Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
 Use neutralizing agent.
 Dispose contaminated material as waste according to Section 13.
 Ensure adequate ventilation.
- **Reference to other sections**
 See Section 7 for information on safe handling.
 See Section 8 for information on personal protection equipment.
 See Section 13 for disposal information.
- **Protective Action Criteria for Chemicals**

· PAC-1:		
131-11-3	dimethyl phthalate	15 mg/m
78-93-3	butanone	200 ppm
· PAC-2:		
131-11-3	dimethyl phthalate	1,600 mg/m
78-93-3	butanone	2700* ppm
· PAC-3:		
131-11-3	dimethyl phthalate	9300* mg/m

(Contd. on page 4)

Product number TV80
Trade name: HARDENER FOR POLYESTER

78-93-3 butanone

(Contd. of page 3)

4000* ppm

7 Handling and storage

· Handling:

- *Precautions for safe handling* Ensure good ventilation/exhaustion at the workplace.
- *Information about protection against explosions and fires:*
Keep ignition sources away - Do not smoke.

· Conditions for safe storage, including any incompatibilities

· Storage:

- *Requirements to be met by storerooms and receptacles:*
Observe the label precautions, the expiration date for the use, if not indicated, is from delivery date of goods.
In cases where there is no reported expiration date, it means that the product must be used within 8 months.
- *Information about storage in one common storage facility:*
Do not store together with reducing agents, heavy-metal compounds, acids and alkalis.
- *Further information about storage conditions:* Keep receptacle tightly sealed.
 - *Recommended storage temperature:* < 25° C

- **Specific end use(s)** Those typical of the product and the instructions in the data sheet if required.

8 Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see item 7.
- **Control parameters**

· Components with limit values that require monitoring at the workplace:

131-11-3 dimethyl phthalate

PEL Long-term value: 5 mg/m

REL Long-term value: 5 mg/m

TLV Long-term value: 5 mg/m

1338-23-4 2-Butanone, peroxide

REL Ceiling limit value: 1.5 mg/m , 0.2 ppm

TLV Ceiling limit value: 0.2 ppm

78-93-3 butanone

PEL Long-term value: 590 mg/m , 200 ppm

REL Short-term value: 885 mg/m , 300 ppm
Long-term value: 590 mg/m , 200 ppm

TLV Short-term value: 300 ppm
Long-term value: 200 ppm
BEI

· Ingredients with biological limit values:

78-93-3 butanone

BEI 2 mg/L

Medium: urine

Time: end of shift

Parameter: Methyl ethyl ketone (nonspecific)

- **Additional information:** The lists that were valid during the creation were used as basis.

(Contd. on page 5)

Product number TV80
Trade name: HARDENER FOR POLYESTER

(Contd. of page 4)

· Exposure controls

· Personal protective equipment:

· General protective and hygienic measures:

- Keep away from foodstuffs, beverages and feed.
- Immediately remove all soiled and contaminated clothing.
- Wash hands before breaks and at the end of work.
- Avoid contact with the eyes and skin.

· Breathing equipment:

Short term filter device:



Suitable respiratory protective device recommended.

Filter A

· Protection of hands:



Protective gloves

Due to missing tests no recommendation to the glove material can be given for the product. Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

The glove material has to be impermeable and resistant to the product .

· Material of gloves

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

· Penetration time of glove material

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· Eye protection:



Tightly sealed goggles

9 Physical and chemical properties

· Information on basic physical and chemical properties

· General Information

· Appearance:

- Form:** Fluid
- Color:** According to product specification
- Odor:** Characteristic
- Odor threshold:** Not determined.

· pH-value: Mixture is non-polar/aprotic.

· Change in condition

- Melting point/Melting range:** Undetermined.
- Boiling point/Boiling range:** 79-80.5 °C (174.2-176.9 °F)

(Contd. on page 6)

Product number TV80
Trade name: HARDENER FOR POLYESTER

(Contd. of page 5)

· Flash point:	100 °C (212 °F)
· Flammability (solid, gaseous):	Not applicable.
· Ignition temperature:	514 °C (957.2 °F)
· Decomposition temperature:	Not determined.
· Auto igniting:	Product is not selfigniting.
· SADT	60°C . See chapter 10
· Danger of explosion:	Product does not present an explosion hazard.
· Explosion limits:	
· Lower:	1.8 Vol %
· Upper:	11.5 Vol %
· Vapor pressure at 20 °C (68 °F):	105 hPa (78.8 mm Hg)
· Density (+/- 0,03) at 20 °C (68 °F):	1.147 g/cm (9.572 lbs/gal)
· Relative density	Not determined.
· Vapor density	Not determined.
· Evaporation rate	Not determined.
· Solubility in / Miscibility with	
· Water:	Not miscible or difficult to mix.
· Partition coefficient (n-octanol/water):	Not determined.
· Viscosity:	
· Dynamic:	Not determined.
· Kinematic at 20 °C (68 °F):	30 s (ISO 3 mm)
· Oxidising properties:	N.A.
· Solvent content:	
· Water:	2.0 %
· VOC content:	3.00 %
	715.0 g/l / 5.97 lb/gal
· Solids content:	95.0 % (EU regulations)
· Other information (HAPS)	
131-11-3 dimethyl phthalate	50-74.99%
· Other information	No further relevant information available.

10 Stability and reactivity

· **Reactivity** typical of the product as indicated in the data sheet

· **Chemical stability**

SADT - (Self accelerating decomposition temperature) is the lowest temperature at which it will trigger the self-accelerating decomposition of a substance contained in a typical packaging used to transport the product.

A dangerous self-accelerating decomposition reaction and, under certain circumstances, explosion or fire can be caused by thermal decomposition at the temperature indicated here or superior to it: 60 ° C. The contact with incompatible substances can cause decomposition at the SADT temperature or at temperatures lower than 60 ° C to it.

· **Thermal decomposition / conditions to be avoided:**

No decomposition if used and stored according to specifications.

· **Possibility of hazardous reactions** Vapours may form explosive mixtures with air

· **Conditions to avoid** No further relevant information available.

(Contd. on page 7)

Product number TV80
Trade name: HARDENER FOR POLYESTER

(Contd. of page 6)

- **Incompatible materials:** Acids, alkalis and oxidizing agents
- **Hazardous decomposition products:**

in case of possible formation of combustion:
 Carbon monoxide and carbon dioxide

11 Toxicological information

- **Information on toxicological effects**

- **Acute toxicity:**

· **LD/LC50 values that are relevant for classification:**

ATE (Acute Toxicity Estimate)

Oral	LD50	1,702 mg/kg (mouse)
Dermal	LD50	12,121 mg/kg (mouse)
Inhalative	LC50/4 h	4.2 mg/l

131-11-3 dimethyl phthalate

Oral	LD50	2,500 mg/kg (mouse)
Dermal	LD50	10,001 mg/kg (rabbit)

1338-23-4 2-Butanone, peroxide

Oral	LD50	1,017 mg/kg (mouse)
Dermal	LD50	4,000 mg/kg (mouse)
Inhalative	LC50/4 h	17 mg/l (mouse)

78-93-3 butanone

Oral	LD50	2,001 mg/kg (mouse)
Dermal	LD50	5,001 mg/kg (rabbit)
Inhalative	LC50/4 h	21 mg/l (mouse)

- **Primary irritant effect:**

· **on the skin:** Caustic effect on skin and mucous membranes.

- **on the eye:**

Strong caustic effect.

Strong irritant with the danger of severe eye injury.

- **Sensitization:** No sensitizing effects known.

- **Additional toxicological information:**

Harmful

Corrosive

Irritant

Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.

Harmful if swallowed.

Harmful if inhaled.

Causes severe skin burns and eye damage.

Causes serious eye damage.

- **Carcinogenic categories**

· **IARC (International Agency for Research on Cancer - Cl. 1 and 2)**

None of the ingredients is listed.

· **NTP (National Toxicology Program)**

None of the ingredients is listed.

(Contd. on page 8)

Product number TV80
Trade name: HARDENER FOR POLYESTER

(Contd. of page 7)

· *OSHA-Ca (Occupational Safety & Health Administration)*

None of the ingredients is listed.

12 Ecological information

· **Toxicity**

· *Aquatic toxicity:*

78-93-3 butanone

EC50	2,029 mg/l (algae) (96 h)
	308 mg/l (daphnia) (48 h)
LC50 (96h)	2,993 mg/l (Fish)

· **Persistence and degradability** No further relevant information available.

· *Substances Easily biodegradable*

78-93-3 butanone .

· **Behavior in environmental systems:**

- *Bioaccumulative potential* No further relevant information available.
- *Mobility in soil* No further relevant information available.

· **Additional ecological information:**

· *General notes:*

Water hazard class 1 (Self-assessment): slightly hazardous for water
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

Must not reach bodies of water or drainage ditch undiluted or unneutralized.

· **Other adverse effects** No further relevant information available.

13 Disposal considerations

· **Waste treatment methods**

· *Recommendation:*

Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

Hand over to hazardous waste disposers.

Dispose of contents and container in accordance with local state and federal regulations.

· **Uncleaned packagings:**

· *Recommendation:* Disposal must be made according to official regulations.

14 Transport information

· **UN-Number**

· *DOT, IMDG, IATA*

UN3105

· *Note*

Check viscosity and flash point at section 9

· **UN proper shipping name**

· *DOT*

Organic peroxide type D, liquid (Methyl ethyl ketone peroxide)

· *IMDG, IATA*

ORGANIC PEROXIDE TYPE D, LIQUID (Methyl ethyl ketone peroxide)

(Contd. on page 9)

Product number TV80
Trade name: HARDENER FOR POLYESTER

(Contd. of page 8)

· **Transport hazard class(es)**

· **DOT**



- **Class** 5.2 Organic peroxides
- **Label** 5.2
- **Class** 5.2 Organic peroxides
- **Label** 5.2

· **IMDG, IATA**



- **Class** 5.2 Organic peroxides
- **Label** 5.2

· **Packing group**

- **DOT, IMDG, IATA** Not applicable

· **Environmental hazards:**

- **Marine pollutant:** No

· **Special precautions for user**

Warning: Organic peroxides

- **Hazard identification number (Kemler code):** -
- **EMS Number:** F-J,S-R
- **Stowage Category** D
- **Stowage Code** SW1 Protected from sources of heat.
- **Segregation Code** SG35 Stow "separated from" SGG1-acids
SG36 Stow "separated from" SGG18-alkalis.
SG72 See 7.2.6.3.2.

· **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**

Not applicable.

· **Transport/Additional information:**

· **IMDG**

- **Limited quantities (LQ)** 125 ml
- **Excepted quantities (EQ)** Code: E0
Not permitted as Excepted Quantity

· **UN "Model Regulation":**

UN 3105 ORGANIC PEROXIDE TYPE D, LIQUID (METHYL ETHYL KETONE PEROXIDE), 5.2

15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
Requirements of Federal Register

(Contd. on page 10)

US

Product number TV80
Trade name: HARDENER FOR POLYESTER

(Contd. of page 9)

- **Various regulations**

- **SARA**

- **Section 355 (extremely hazardous substances):**

None of the ingredients is listed.

- **Section 313 (Specific toxic chemical listings) :**

131-11-3	dimethyl phthalate	50-74.99%
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- **TSCA (Toxic Substances Control Act):**

All components have the value ACTIVE.

- **Hazardous Air Pollutants**

131-11-3	dimethyl phthalate
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- **Proposition 65**

- **Chemicals known to cause cancer:**

None of the ingredients is listed.

- **Chemicals known to cause reproductive toxicity for females:**

None of the ingredients is listed.

- **Chemicals known to cause reproductive toxicity for males:**

None of the ingredients is listed.

- **Chemicals known to cause developmental toxicity:**

None of the ingredients is listed.

- **Carcinogenic categories**

- **EPA (Environmental Protection Agency)**

131-11-3	dimethyl phthalate	D	50-74.99%
78-93-3	butanone	I	2.5-4.99%

- **TLV (Threshold Limit Value)**

None of the ingredients is listed.

- **NIOSH-Ca (National Institute for Occupational Safety and Health)**

None of the ingredients is listed.

- **National regulations:**

The product is subject to be labeled according with the prevailing version of the regulations on hazardous substances.

- **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- **Department issuing SDS:** IVM Chemicals Srl
- **Contact:** See emergency phone
- **Date of preparation / last revision** 09/23/2022 / 150

- **Abbreviations and acronyms:**

IMDG: International Maritime Code for Dangerous Goods
 DOT: US Department of Transportation
 IATA: International Air Transport Association
 EINECS: European Inventory of Existing Commercial Chemical Substances
 ELINCS: European List of Notified Chemical Substances
 CAS: Chemical Abstracts Service (division of the American Chemical Society)
 NFPA: National Fire Protection Association (USA)
 HMIS: Hazardous Materials Identification System (USA)
 VOC: Volatile Organic Compounds (USA, EU)

(Contd. on page 11)

Product number TV80
Trade name: HARDENER FOR POLYESTER

(Contd. of page 10)

LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
NIOSH: National Institute for Occupational Safety
OSHA: Occupational Safety & Health
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit
BEI: Biological Exposure Limit
Flammable Liquids 2: Flammable liquids . Category 2
Organic Peroxides - Type D: Organic peroxides . Type C/D
Acute Toxicity - Oral 4: Acute toxicity . Category 4
Skin Corrosion 1B: Skin corrosion/irritation . Category 1B
Eye Damage 1: Serious eye damage/eye irritation . Category 1
Eye Irritation 2A: Serious eye damage/eye irritation . Category 2A
Specific Target Organ Toxicity - Single Exposure 3: Specific target organ toxicity (single exposure) . Category 3
• Sources
REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL and following amendments
Agency ECHA web site
INRS Fiche Toxicologique
IARC International agency for research on cancer
• * Data compared to the previous version altered.