



**FORM  
FOR NOTIFICATION OF FINAL REGULATORY ACTION  
TO BAN OR SEVERELY RESTRICT A CHEMICAL**

IMPORTANT: See instructions before filling in the form

COUNTRY: REPUBLIC OF KOREA

**PART I: PROPERTIES, IDENTIFICATION AND USES**

<b>1. IDENTITY OF CHEMICAL</b>		
1.1	Common name	Benzidine
1.2	Chemical name according to an internationally recognized nomenclature (e.g. IUPAC), where such nomenclature exists	4,4'-Diphenyldiamine (1,1'-Biphenyl)-4,4'-diamine (IUPAC)
1.3	Trade names and names of preparations	No information is available
1.4	Code numbers	
1.4.1	CAS number	92-87-5
1.4.2	Harmonized System customs code	2921-59
1.4.3	Other numbers (specify the numbering system)	99-4-10 (designation number of the banned chemical in the Ministry of Environment's Public Notice No. 2003-163(16 Sept. 2003) in Korea)

<b>1.5 Indication regarding previous notification on this chemical, if any</b>	
1.5.1	This is a first time notification of final regulatory action on this chemical.
1.5.2	This is a modification of a previous notification of final regulatory action on this chemical. The sections modified are: _____
	<input checked="" type="checkbox"/> This notification replaces all previously submitted notifications on this chemical.
	Date of issue of the previous notification: February 25 1992

**PLEASE RETURN THE COMPLETED FORM TO:**

Secretariat for the Rotterdam Convention Plant Protection Service Plant Production and Protection Division, FAO Viale delle Terme di Caracalla 00100 Rome, Italy  Tel: (+39 06) 5705 3441 Fax: (+39 06) 5705 6347 E-mail: pic@fao.org	OR	Secretariat for the Rotterdam Convention UNEP Chemicals  11-13, Chemin des Anémones CH – 1219 Châtelaine, Geneva, Switzerland  Tel: (+41 22) 917 8183 Fax: (+41 22) 797 3460 E-mail: pic@unep.ch
---	----	--

1.6 Information on hazard classification where the chemical is subject to classification requirements	
International classification systems	Hazard class
IARC	Group 1
ACGIH	Group A1
Other classification systems	Hazard class
US NTP(National Toxicology Program)	Group 1
US EPA	Group A
•TCCA(Toxic Chemicals Control Act of Korea)	•Harmful if swallowed
	•May cause cancer

1.7 Use or uses of the chemical	
1.7.1	<b>Pesticide</b>
	Describe the uses of the chemical as a pesticide in your country: No information is available
1.7.2	<input checked="" type="checkbox"/> <b>Industrial</b>
	Describe the industrial uses of the chemical in your country: Benzidine was used as an intermediate in the production of dye stuff

1.8 Properties	
1.8.1	<b>Description of physico-chemical properties of the chemical</b> Form: white crystalline powder M.p.: 115-120°C b.p; about 400°C Sol in organic solvent

1.8.2	<b>Description of toxicological properties of the chemical</b> Acute oral: LD50 mus 214mg/kg, rat 309mg/kg Carcinogenic to humans(IARC group 1, NTP group a)  Ref. HSDB, IRIS, RTECS
1.8.3	<b>Description of ecotoxicological properties of the chemical</b> Fish toxicity: LC50(fathead minnow, 96hr) > 20mg/l LC50(rainbow trout, 96hr) 7.4mg/l  Ref. HSDB, IRIS, RTECS

**PART II: FINAL REGULATORY ACTION**

2. FINAL REGULATORY ACTION	
2.1	The chemical is: <input checked="" type="checkbox"/> banned OR severely restricted

<b>2.2</b>	<b>Information specific to the final regulatory action</b>
<b>2.2.1</b>	<b>Summary of the final regulatory action</b> Benzidine and mixtures containing 0.1% or more of Benzidine are banned for manufacture, import and use as an industrial chemical. No remaining uses are allowed.
<b>2.2.2</b>	<b>Reference to the regulatory document</b> Ministry of Environment's Public Notice No. 2003-163(Amended on 16 Sept. 2003)
<b>2.2.3</b>	<b>Date of entry into force of the final regulatory action</b> Benzidine and its mixtures were banned for manufacture, use and import by MOE's Public Notice No 1996-75(1 Jun 1996). Final amended notice which designated mixtures containing 0.1% or more of any of them as banned chemical took into force on 13 Nov. 2003.

<b>2.3</b>	<b>Was the final regulatory action based on a risk or hazard evaluation?</b>	<input checked="" type="checkbox"/> Yes No
	<b>If yes, give information on such evaluation</b> <ul style="list-style-type: none"><li>● From the chemicals designated as toxic according to the TCCA or from those existing chemicals found to have toxic effect on humans or the environment through various international assessments, the National Institute of Environmental Research(NIER) conducts hazard evaluation in accordance with the provisions on hazard evaluation of chemicals – NIER's Public Notice No. 1999-39(14 June 1999) - and submits recommendation to the Ministry of Environment. Upon receiving the recommendation from the NIER, The Ministry of Environment takes consultation with relevant ministries and decides whether to ban or severely restrict the chemical for industrial uses. The final decision is published in Public Notice. Especially NIER concentrated on its assessment whether Benzidine might cause risk to human health by ingestion or short term direct exposure and might cause damage to or adverse effects on human organs through exposure when assessed for carcinogenicity and genetic toxicity according to Article 10 of NIER's Public Notice,</li><li>● As for Benzidine and mixtures containing 0.1% or more of Benzidine, they are banned due to risk of carcinogenic effect on humans</li></ul>	
	<b>Reference to the relevant documentation</b> The NIER's Public Notice No. 1999-39(14 June 1999)	

<b>2.4</b>	<b>Reasons for the final regulatory action</b>	
<b>2.4.1</b>	<b>Is the reason for the final regulatory action relevant to the human health?</b>	<input checked="" type="checkbox"/> Yes No
	<b>If yes, give summary of the known hazards and risks presented by the chemical to human health, including the health of consumers and workers</b> Benzidine is a carcinogen to humans(IARC group 1) and it causes irritation of eyes, skin, and respiratory tract. Laboratory studies shows it is genotoxic in bacterial and mammalian assays, including a transplacental micronucleus test	
	<b>Reference to the relevant documentation</b>	

	<p>-U.S. EPA IRIS on Benzidine from the National Library of Medicine's TOXNET System, November 1, 1994</p> <p>-ACGIH. Threshold Limit Values (TLVs) for Chemical Substances and Physical Agents and Biological Exposure Indices (BEIs) for 1995-1996. Cincinnati, OH: ACGIH, 1995.</p> <p>-IARC. Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Man. Geneva: WHO, International Agency for Research on Cancer, p. S7 58 (1987)</p> <p>- DHHS/NTP; Seventh Annual Report on Carcinogens (1994)</p>
	<p><b>Expected effect of the final regulatory action</b></p> <p>It is expected that the regulatory action will significantly reduce the potential risk of carcinogenic effect to workers and others involved in dye manufacturing industry.</p>

<b>2.4.2</b>	<p><b>Is the reason for the final regulatory action relevant to the environment?</b></p>	<p>Yes</p> <p><input checked="" type="checkbox"/> No</p>
	<p><b>If yes, give summary of the known hazards and risks to the environment</b></p>	
	<p><b>Reference to the relevant documentation</b></p>	
	<p><b>Expected effect of the final regulatory action</b></p>	

<b>2.5 Category or categories where the final regulatory action has been taken</b>		
<b>2.5.1</b>	<p><b>Final regulatory action has been taken for the chemical category</b></p>	<p><input checked="" type="checkbox"/> <b>Industrial</b></p>
	<p><b>Use or uses prohibited by the final regulatory action</b></p> <p>Benzidine and mixtures containing 0.1% or more of Benzidine are banned for manufacture, import and use as an industrial chemical. No remaining uses are allowed, except for the use mentioned in the subsection below.</p>	
	<p><b>Use or uses that remain allowed</b></p> <p>Use of the chemical for research or laboratory purposes is allowed.</p>	

<b>2.5.2</b>	<b>Final regulatory action has been taken for the chemical category</b>	<b>Pesticide</b>
	<b>Formulation(s) and use or uses prohibited by the final regulatory action</b>	
	No information is available	
	<b>Formulation(s) and use or uses that remain allowed</b>	
No information is available		

<b>2.5.3 Estimated quantity of the chemical produced, imported, exported and used, where available.</b>		
	<b>Quantity per year (MT)</b>	<b>Year</b>
<b>Produced</b>		
<b>Imported</b>		
<b>Exported</b>	10.80	1998
<b>Used</b>	199.881	1996
	317.600	1998

<b>2.6</b>	<b>Indication, to the extent possible, of the likely relevance of the final regulatory action to other states and regions</b>

<b>2.7</b>	<b>Other relevant information that may cover:</b>
<b>2.7.1</b>	<b>Assessment of socio-economic effects of the final regulatory action</b>
	No information is available

<b>2.7.2</b>	<b>Information on alternatives and their relative risks</b>
No information is available	

<b>2.7.3</b>	<b>Relevant additional information</b>
	No information is available

**PART III : GOVERNMENT AUTHORITIES**

<b>Ministry/Department and authority responsible for issuing/enforcing the final regulatory action</b>	
<b>Institution</b>	Chemicals Safety Div., Ministry of Environment
<b>Address</b>	Government Gwacheon Complex 1, Joongang-dong, Gwachon, Gyeonggi-do, Republic of Korea 427-729
<b>Telephone</b>	82-2-2110-7951
<b>Telefax</b>	82-2-507-2457
<b>E-mail address</b>	<a href="mailto:chemical@me.go.kr">chemical@me.go.kr</a>
<b>Designated National Authority</b>	
<b>Institution</b>	Chemicals Safety Div., Ministry of Environment
<b>Address</b>	Government Gwacheon Complex 1, Joongang-dong, Gwachon, Gyeonggi-do, Republic of Korea 427-729
<b>Name of person in charge</b>	Yeon Soo, PARK
<b>Position of person in charge</b>	Director
<b>Telephone</b>	82-2-2110-7951
<b>Telefax</b>	82-2-507-2457
<b>E-mail address</b>	<a href="mailto:chemical@me.go.kr">chemical@me.go.kr</a>

Date, signature of DNA and official seal: 30/04/04 Yeon Soo, PARK

