

GHSの挑戦

化学品の危険有害性情報に関する国際規格

監修：城内 博

(国連GHS専門家小委員会委員)

付録 CD『GHSの概論・Q&A・分類の手引・絵表示』

化学工業日報社

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化学品の危険有害性
情報に関する国際規格

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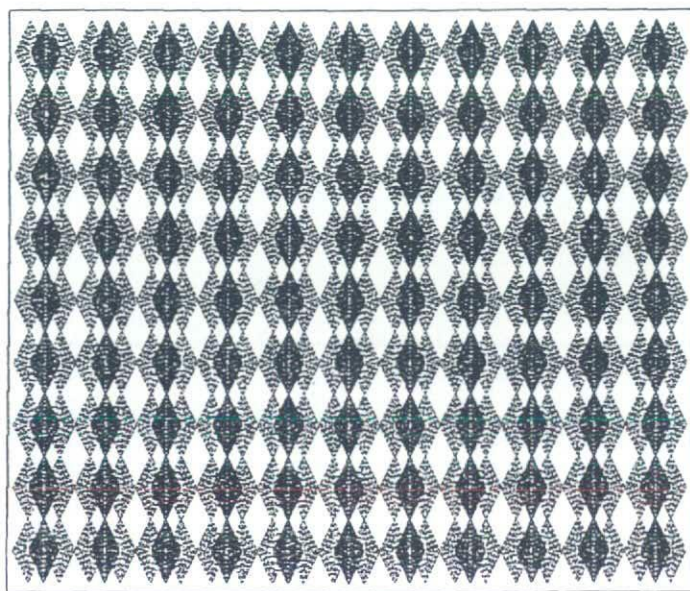
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化学品の分類および表示に関する世界調和システム

GHS Q&A

実務者のためのガイドブック

城内 博／宮川宗之／森田 健 共著



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GHS Q&A

実務者のためのガイドブック

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毒性情報収集 ガイドランス



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◆化学物質事故

危険性知らせる法整備を

化学物質による作業事故

が後を絶たない。北九州市の工業用水道の送水管敷設工事現場で一酸化炭素で作業員3人が亡くなった。茨城県ではエチレンプラントの火災事故で4人が犠牲になった。こうした事故が起きる度に教育や再発防止対策の必要性が叫ばれる。

わが国では1950年代以降の高度経済成長期に多くの災害を経験し、そこから得た経験を基に安全な作業システムを作り上げてき

た。近年大事故が起きるたびに団塊の世代が作り上げてきたシステムが継承されていないことが指摘され、安全に対する労働者教育の問題ばかりがクローズアップされている。

しかし本当にそれだけだろうか。私にはもっと深刻な日本特有の問題があるように思えてならない。実は化学物質に限らず危険なものに危険であると伝えるシステムが法律として整備されず、社会通念としても醸成されてこなかったのではないか。

これはアスベストによる肺がんや中皮腫の患者が「そんな危険なものを吸っているとは知らなかった」

と述べていることや、化学物質ではないが、血液製剤によるC型肝炎の問題でウイルスによる感染が懸念されていたにもかかわらず、情報が患者に伝わっていなかったことからもうかがえる。極言すれば、長年にわたり行政や業界が「知らせる義務」を怠り、労働者や消費者は「知る権利」を看過してきたとも言える。

欧米では数十年前から化学品規制のなかにこれらの概念を採り入れ、危険な物質が含まれていればラベルに表示し、注意を喚起するシステムを構築してきた。国連・経済社会理事会は、人の健康と環境の保護を目的として、勧告「化学

品の分類および表示に関する世界調和システム(GHS)」を2003年に出した。これは危険有害性の分類を世界的に統一し、ラベル等で知らせるためのものである。

私も専門家として勧告案の作成に携わった。欧米ではそれを基に法律の見直しが進み、数年後には世界各地でのシステムが実施される見込みだ。

ところが、日本にはこれをそのまま導入できる法体系がない。勧告に基づき06年に労働安全衛生法が改正され、99物質についてラベルで表示することになって

べて余りに貧弱だし、表示の対象は労働現場に限られ、消費者が手にする様々な製品にはラベル表示の規制は及ばない。

「安全文化の創造」が言われて久しいが、このように最近の安全に係る多くの問題を見ると、実際には目標から後退しているように思われる。簡単ではない労働者や消費者教育をうんぬんする前に、まずラベルなどで危険性を知らせるシステムを作るべきである。危険性を知れば個人々人はそれぞれに対処が可能となる。

「知らせること」がなければ「知ること」は困難であり、「知らせること」をどう社会のシステムに取り込むかが重要だ。消費者や労働者の視点に立つ製品安全のために「知らせる」ための法整備を期待したい。

Japan

TETSUO SATOH AND TAKESHI MORITA

INTRODUCTION

Toxicology is a relatively new science compared with pharmacology and pathology. However, it is a multidisciplinary field encompassing these subjects as well as other related life and social sciences. In Japan, the study of modern toxicology originated in academic settings in the 1970s subsequent to severe health tragedies induced by chemicals in the 1960s. These included the congenital malformations induced by thalidomide, Minamata disease induced by methyl mercury, Itai-itai disease induced by cadmium, chionoform-induced SMON (subacute myelo-optico-neuropathy) disease, and Kanemi Oil Poisoning Case induced by Co-PCB (coplanar polychlorinated biphenyl) or PCDF (polychlorinated dibenzo furan). These events were driving forces in the formation of modern toxicology. The pharmaceutical and chemical industries joined in the pursuit of toxicological research in the 1980s. As GLP (Good Laboratory Practice) system was also introduced in the 1980s, industrial companies needed a platform for the exchange of information and for discussion. In the 1990s, further development of the GLP system and experiences in industry ensured high-quality testing and results. In addition, regulators became involved with the scientific sector. Their participation induced the development of regulatory sciences including toxicity test guidelines, e.g., OECD or ICH guidelines, for hazard identification, and subsequently industry recognized the significance of education/training. Subjects such as risk evaluation, mechanistic toxicology and cutting-edge research toxicology including the -omics disciplines are advancing among the academic, regulatory, and industrial sectors in the 2000s. High-throughput

screening of chemicals is also an important issue, and food safety is of particularly high interest to the public. On the other hand, clinical toxicology including occupational safety and epidemiology, is not a major focus of toxicology in Japan. Toxicology should clearly play an important role in risk communication. Many future challenges to toxicology remain.

TOXICOLOGY IN JAPAN

History of the Japanese Society of Toxicology – Past, present and future

Origin of the Japanese Society of Toxicology

In Japan, the Toxicology Research Group and the Toxic Action Research Group were formed in 1975 and 1976, respectively. In 1981, the two groups merged to form the Japanese Society of Toxicological Sciences (JSTS) as a non-profit scientific society to promote the acquisition and utilization of knowledge in toxicology and to facilitate the exchange of information among its members as well as among investigators worldwide. The first membership list contained 943 names on June 1, 1981, and grew to nearly 2400 members in 25 years. Prior to the founding of the JSTS, the Toxicological Research Group joined the membership of the International Union of Toxicology in 1980. The JSTS was renamed the Japanese Society of Toxicology (JST) in 1997.

Mission

The mission of the JST is to advance health through understanding of toxicology, and to stimulate research in toxicology.

p0040 JST shall promote the following activities:

- o0010 1. Convening the annual meeting.
- o0020 2. Publication of the official Journal.
- o0030 3. Education and certification of toxicologists.
- o0040 4. Scientific and publicity activities for members and the public.
- o0050 5. Other programs/projects necessary to accomplish the purpose of JST.

s0060 **Members**

p0100 JST has recognized five member categories: General members, Student members, honorary members, meritorious members, and Supporting members. Among its current members are 42 from across the world; Korea (15), USA (11), United Kingdom (9), Canada (3), China (1), and Denmark (1). JST currently has the second largest toxicology society membership in the world. Member affiliations are Contract Research Organization (CRO, 70%), Academia (22%), Government (6%) and others (2%).

s0070 **Board of Directors, Council and General Meeting**

p0110 JST's managing structure includes 20 Directors and 292 Councillors as of September 1, 2006. The Board of Directors meets twice a year to draft the action plans of JST. The Council Meeting and the General Meeting are held once a year to discuss the action plans proposed by the Board of Directors.

s0080 **Committees**

p0120 JST has five strategic Committees to accomplish the society activities - General Affairs, Editorial, Educational, Finance and Science and Publicity.

s0090 **General Affairs Committee**

p0130 The committee has two major responsibilities. One is to strategically draw up the general action plans of JST for the year by reviewing the plans proposed by the individual committees and preparing the subjects for discussion at the Board of Directors. Another is to manage JST membership, including nomination and approval of new councillors and members.

s0100 **Editorial Committee**

p0140 As an official journal, JST has published the 'Journal of Toxicological Sciences (JTS)' bimonthly (online ISSN: 1880-3989; print ISSN: 0388-1350). The journal contains invited review articles, peer-reviewed original papers, and Letter to the Editor. JTS has invited distinguished toxicologists from throughout the world to become Associate Editors and Editorial Board

members. One of the society's top strategic priorities is the ongoing development of its journal. JST is in the process of developing a new look and feel for the journal. In addition, based on the judgment of the Educational Committee, JST provides Best Paper Awards (Tanabe Award) for the best scientific papers appearing in JTS. The recipients of the award are honored at a special awards ceremony at the JST annual meeting, and their names are listed in the JST publications. The Editorial Committee takes responsibilities for the publication of JTS and the determination of the candidates for the Best Paper Awards.

Educational Committee

To foster and improve the quality of toxicologists in Japan, the Education Committee has provided certification and recertification examinations, continuing education courses, and fundamental education courses every year.

Since 1995, the Board of Directors of JST has seriously discussed the accreditation and certification of toxicologists in Japan. After extensive deliberations, the certification program of toxicologists was newly launched in 1997 under the control of the Education Committee. The aspect of our certification examination is similar to that of the American Board of Toxicology. At the first certification examination in 1997, 99 toxicologists were certified by the JST as diplomates of the Japanese Society of Toxicology (D.J.S.T.). The written examination has been offered every year, and 289 toxicologists have been formally approved as diplomate. As of June, 2006, 78% of the diplomates are from industry, and 14% from academia, and 8% from national institutes, research institutes, and foundations. Diplomates can be recertified every 5 years based upon their active practice of toxicology and maintaining an expert knowledge in general toxicology.

An applicant must have had a principal involvement in the practice of toxicology, in addition to the appropriate background education. The examination covers all aspects of toxicology and toxicity testing. The certified toxicologist should have knowledge which encompasses all aspects of toxicology and should be able to conduct proper toxicological planning, testing, evaluation and risk assessment.

Financial Committee

The Financial Committee deals with all of the financial issues of JST. JST has continued to make progress in strengthening the financial foundation of the Society. Major steps are taken to set up and implement a system for monitoring ongoing financial actions and

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develop future plans. In addition, the society has considered modernizing and upgrading the budget and expenditures management process. The society has 48 supporting members that are mainly private industries, and they have supported the achievement of the strategic plans of the society financially.

s0130 *Science and Publicity Committee*

p0190 JST has provided public education lectures on toxicology since 1995 at its annual meetings, and the JST website has been redesigned with links to other websites in 2006. The website also presents updated information in both Japanese and English for its worldwide membership. These activities fall under the auspices of the Science and Publicity Committee. Furthermore, in addition to the above-mentioned Best Paper Awards, JST presents prestigious awards such as the Toxicological Science Award and the Young Investigator Awards each year in recognition of distinguished toxicologists, based on the judgment of the Awards Subcommittee, organized under the control of the Science and Publicity Committee. The recipients of the awards are honored at a special awards ceremony at the JST annual meeting, and their names are listed in the JST publications.

s0140 *National and International Activities*

s0150 *National Level*

s0160 *Annual Meeting*

p0200 The scientific meeting of JST is held annually. The scientific program of the annual meeting contains the invited lectures of prestigious speakers from throughout the world, symposia, workshops, oral/poster presentations, luncheon seminars, and panel discussions. At the annual meeting in 2006, there were 1600 participants from five countries. This is the largest number of meeting registrants to date.

s0170 *Public Education Lecture*

p0210 To promote public education in toxicology, JST has organized a lecture for the public during each year's annual meeting. Scientific experts are invited to give a lecture on a popular and important topic related to clinical medicine and drug therapy.

s0180 *International Level*

s0190 *International Congress of Toxicology*

As one of its global activities, the IUTOX organizes the International Congress of Toxicology (ICT) every 3 years, and the ICTs have been hosted by an IUTOX member society, as elected by the IUTOX member societies in the world. The JST hosted the ICT-IV in

1986 in Yokohama, Japan. Professor Fuminori Sakai, Past Vice President of IUTOX, chaired the ICT-IV, and 1104 registrants from 39 different countries participated.

Asian Society of Toxicology

The JST and the Korean Society of Toxicology organized joint meetings of toxicology in 1987 (Seoul, Korea), 1990 (Nagoya, Japan) and 1993 (Seoul, Korea). In 1994, representatives of the toxicology societies in Japan, China, Korea, Taiwan, and Thailand met in Sapporo, Japan to promote the toxicological sciences in Asia. As a consequence of serious discussions, the establishment of the Asian Society of Toxicology (ASITOX) (formerly The Asian Federation of the Toxicological Sciences) was officially approved at the meeting. ASITOX joined the IUTOX membership in 1996. The first ASITOX congress (ASITOX-I) was hosted by JST in Yokohama, Japan in 1997. There were 474 participants from 13 countries. ASITOX-II, III, and IV have been held in Korea, Thailand, and China respectively, spaced 3 years apart. The 4th Congress will be held in Taiwan in 2009.

Risk Assessment Summer School

IUTOX has sponsored the Risk Assessment Summer School (RASS) every other year. The purpose of RASS is to train young toxicologists by offering stimulating lectures by experts and discussing the topics under consideration. One or two young toxicologists representing JST have participated in every RASS meeting in the past.

Future Perspectives

The development of toxicology as a recognized scientific discipline has proceeded at a rapid pace for the last 10 years. Its genomic basis, in particular, has been of consequence, and its growth is likely to accelerate in the future. Over the years, JST has achieved exceptional success with its meetings, publications, and its member services and outreach activities. Two important tasks in JST activities include maintaining the high-quality certification program of toxicologists and considering ways to improve the society journal.

Concerning certification, the number of JST-certified toxicologists has increased every year and the certification program is now well recognized throughout Japan. The diplomates receive several benefits such as health promotion at the workplace. Another goal of the program is to expand it to toxicologists in other countries. Concerning its journal, the JTS editorial team envisions a publication with increased visibility and which enhances the scientific edge in the

field of toxicology. As JTS modernizes, it will provide a highly efficient web-based manuscript submission and review system in the near future. The system will facilitate all aspects of manuscript submission, including tracking and communication between authors, reviewers, and editor.

p0270 Finally, the ultimate aim of all the Committees of JST is to advise Council in developing an implementation plan that ensures a systematic and efficient expenditure of energies and resources, and that is most closely aligned with a carefully considered strategy for accomplishing its long-range plan.

p0280 For more details, contact the Japanese Society of Toxicology Headquarters:

p0290 International Medical Center, Shinanomachi Rengakan, 35 Shinano-machi, Shinjuku-ku, Tokyo 160-0016, Japan

p0300 Phone : +81-3-5361-7075

p0310 Fax: +81-3-5361-7091

p0320 Email: jst@imic.or.jp

p0330 Web: <http://www.jsot.gr.jp/english/index.html> (English)

p0340 Web: <http://www.jsot.gr.jp/index.html> (Japanese)

metabolism, excretion, mutagenesis, carcinogenesis, hepatotoxicity, and the natural toxins are covered.

Japan Poisoning Information Centre (Ed.) (1999) p0500
First aid manual for acute poisoning, 3rd Edition p0510
 Tokyo: Jiho (Japanese) p0520

Satoh T, Kariya K, Kitada K (Eds.) (2006) p0530
Introduction to Clinical Toxicology (formerly p0540
Toxicology in Medicine), 3rd Edition
 Tokyo: Nankodo (Japanese) p0550

A textbook for advanced undergraduate and graduate students to use in the classroom setting. It provides a thorough, systematic introduction to toxicology. It describes the most current knowledge on toxicology from the viewpoint of clinical pharmacy rather than fundamental pharmaceutical sciences. p0560

Kariya K, Satoh T, Takahashi M, Noguchi H (Eds.) p0570
 (2004)

Japanese Edition of Casarett & Doull's Toxicology, p0580
6th Edition

Tokyo: Scientist Publishers (Japanese) p0590

One of the best-selling books in toxicology, 'Casarett & Doull's Toxicology' (6th ed.) (edited by C. Klaassen) was translated into Japanese. The book is extremely useful for the education and training of toxicologists in Japan. p0600

National Profile on Chemicals Management JAPAN p0610
 (2003)

Jiho Co. Ltd. (Japanese) p0620
 Web: <http://www.mhlw.go.jp/houdou/2003/10/dl/h1029-1b.pdf> (Japanese only) p0630

Sakamoto T (Japanese Translating Ed.) (1999) p0640
Poisoning and Drug Overdose, 2nd Edition p0650

Kent R Olson (Ed.) p0660
 Tokyo: Medical Science International (Japanese) p0670

Fujita S (Ed.) (1999) p0680
Toxicology p0690
 Tokyo: Asakura-shoten (Japanese) p0700

This is a textbook mainly for toxicology education in veterinary school. p0710

Education Committee of the Japanese Society of Toxicology (Ed.) (2002) p0720

Toxicology p0730
 Tokyo: Asakura-shoten (Japanese) p0740

Journals

Almost all journals are published as official journals of the professional societies. See Professional Society Section. p0480
 p0490

RESOURCES

Books

p0350 Naitoh H, Yokote N (Japanese Translating Eds.) (2002/2003)

p0360 *Clinical Toxicology*

p0370 Ford et al (Eds.) Vols. 1/2

p0380 Tokyo: Maruzen (Japanese)

p0390 Japanese Society of Toxicology (Ed.) (2003)

p0400 *Dictionary of Toxicological Terms*

p0410 Tokyo: Jiho (Japanese-English)

p0420 This is a Japanese-English and English-Japanese dictionary of terms which are frequently used in toxicology.

p0430 Nishi K (Ed.) (2003)

p0440 *Emergency manual for drugs and poisoning, 7th Edition*

Tokyo: Iyaku-Journal (Japanese)

Satoh T, Ueno Y (Eds.) (1995)

Essential Toxicology, 3rd Edition

Tokyo: Nankodo (Japanese)

p0750 A basic textbook in toxicology for undergraduate and graduate students. Topics such as toxicokinetics,

- p0960 **Foods & Food Ingredients Journal of Japan**
 p0770 Web: <http://www.ffcr.or.jp/zaidan/FFCRHOME.nsf/pages/ffij-eindex> (English Abstract)
 p0780 Web: <http://www.ffcr.or.jp/zaidan/FFCRHOME.nsf/pages/ffij-jindex> (Japanese Abstract)
- p0790 **Health and Nutrition News**
 p0800 Web: http://www.nih.go.jp/eiken/english/info/info_news_e.html (English)
 p0810 Web: http://www.nih.go.jp/eiken/info/info_news.html (Japanese)
- p0820 **Industrial Health**
 p0830 Web: http://www.niih.go.jp/en/indu_hel/index.html (English)
 p0840 Web: http://www.niih.go.jp/jp/indu_hel/index.html (Japanese)
- p0850 *Industrial Health* is an international academic journal published by the National Institute of Industrial Health (NIIH). Contributed papers are closely examined by professors in Japan and overseas. The journal covers fields in medicine, ergonomics, industrial hygiene engineering, and policy sciences.
- p0860 **The Tohoku Journal of Experimental Medicine**
 p0870 Web: <http://journal.med.tohoku.ac.jp/> (English)
 p0880 Tohoku University publishes *The Tohoku Journal of Experimental Medicine* (TJEM). The TJEM is one of the oldest and the most prestigious periodicals in Japan and the world. It is open to original articles in all branches of medical sciences from authors throughout the world.
- s0280 **Technical Reports and other Documents**
- p0890 **Chemicals in the Environment; Report on Environmental Survey and Monitoring of Chemicals in FY2001-2005**
 p0900 Web: <http://www.env.go.jp/chemi/kurohon/en/index.html> (English)
 p0910 Web: <http://www.env.go.jp/chemi/kurohon/index.html> (Japanese)
- p0920 'Chemicals in the Environment' by the Ministry of the Environment (MOE) includes three types of surveys i.e., Initial Environmental Survey, Environmental Survey for Exposure Study, and Monitoring Investigation.
- p0930 **Chemical Hazard Evaluation Sheets**
 p0940 Web: http://www.safe.nite.go.jp/data/sougou/pk_list.html?table_name=hyoka&rank=sheet&sort=cas (Japanese only)
- Chemical Substance Fact Sheets for Risk Communication**
 Web: <http://www.env.go.jp/chemi/communication/factsheet.html> (Japanese only)
- The fact sheets provide general public with simplified and easy-to-understand information on chemical substances subjected to the Law Concerning Reporting, etc., of Release of Specific Chemical Substances to the Environment and Promotion of the Improvement of their Management (PRTR Law).
- Information on PRTR chemicals**
 Web: http://www.env.go.jp/chemi/prtr/archive/target_chemi.html (Japanese only)
- Information System on Safety and Effectiveness for 'Health Foods'**
 Web: <http://hfnet.nih.go.jp/> (Japanese only)
- Links to Chemical Safety Database for Chemical Management**
 Web: http://www.meti.go.jp/policy/chemical_management/06DB/index.htm (Japanese only)
- Results of Eco-toxicity tests of chemicals conducted by Ministry of the Environment in Japan (2003 version)**
 Web: <http://www.env.go.jp/chemi/sesaku/02e.pdf> (English)
 Web: <http://www.env.go.jp/chemi/sesaku/02.pdf> (Japanese)
 Web: <http://www.env.go.jp/chemi/sesaku/01.html> (Japanese only)
- Test results conducted based on the OECD-GLP standard and the OECD test guidelines are shown. However, because these data have not been evaluated by experts, confirmation of test result is needed if these data are to be used for assessment.
- Databases**
- Chemical Database (WebKis-Plus)**
 Web: <http://w-chemdb.nies.go.jp/index.html> (English)
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- Chemical Hazard Evaluation Reports**
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- p1190 **Comprehensive Information Search Systems on Food
Safety**
- p1200 Web: <http://www.ifsis.fsc.go.jp/fsilv1/do/FSILogon>
(Japanese only)
- p1210 **Database for GHS Classification Results**
- p1220 Web: <http://www.safe.nite.go.jp/ghs/ghsi.html>
(Japanese only)
- p1230 Web: <http://www.safe.nite.go.jp/ghs/index.html>
(Japanese only)
- p1240 The results of GHS classification on about 1500 chemi-
cals and the documents for classification are presented.
- p1250 **Environmental Risk Evaluation on Chemicals, Vols.
1-4**
- p1260 Web: <http://www.env.go.jp/chemi/risk/index.html>
(Japanese only)
- p1270 **Evaluation Reports by the Food Safety Commission**
- p1280 Web: <http://www.fsc.go.jp/english/index.html>
(English)
- p1290 Web: <http://www.fsc.go.jp/index.html> (Japanese)
- p1300 The Food Safety Commission is an organization that
undertakes risk assessment. The Commission's pri-
mary goals can be summarized into three main tasks:
(1) conducting risk assessment on food in a scientific,
independent, and fair manner, and making recom-
mendations to relevant ministries based upon the
results from the risk assessment, (2) implementing
risk communication among stakeholders such as con-
sumers and food-related business operators, and (3)
responding to food-borne accidents and emergencies.
- p1310 Food additives:
- p1320 Web: <http://www.fsc.go.jp/english/evaluationre->
[port/foodadditive.html](http://www.fsc.go.jp/english/evaluationreport/foodadditive.html) (English)
- p1330 Web: <http://www.fsc.go.jp/senmon/tenkabutu/>
[index.html](http://www.fsc.go.jp/senmon/tenkabutu/index.html) (Japanese)
- p1340 Pesticides:
- p1350 Web: <http://www.fsc.go.jp/english/evaluationre->
[port/pesticide.html](http://www.fsc.go.jp/english/evaluationreport/pesticide.html) (English)
- p1360 Web: <http://www.fsc.go.jp/senmon/nouyaku/index.html>
(Japanese)
- p1370 Information of area of expertise:
- p1380 Web: <http://www.fsc.go.jp/senmon/index.html>
(Japanese only)
- Risk evaluation:
Web: <http://www.fsc.go.jp/hyouka/index.html>
(Japanese only)
- Global Information Network on Chemicals (GINC)
Chemical substances toxicity database**
- Web: <http://wwwdb.mhlw.go.jp/ginc/html/db1.html> (English)
- Web: <http://wwwdb.mhlw.go.jp/ginc/html/db1-j.html> (Japanese)
- This database is for existing chemicals with high pro-
duction volume (HPV). Several types of toxicity testing
reports are included, e.g., in most cases, a single dose
toxicity test, a 28-day repeat dose toxicity test, a repro-
ductive/development toxicity test and mutagenicity
tests. Each report consists of the nomenclature of the
chemical, abstracts and summarized data from the
studies in English, and toxicity test results in order.
- Health and Nutrition Information Infrastructure
Database System**
- Web: [http://nihn-jst.nih.go.jp:8888/nns/owa/nns_](http://nihn-jst.nih.go.jp:8888/nns/owa/nns_main_e.hm01)
[main_e.hm01](http://nihn-jst.nih.go.jp:8888/nns/owa/nns_main_e.hm01) (English)
- Web: [http://nihn-jst.nih.go.jp:8888/nns/owa/nns_](http://nihn-jst.nih.go.jp:8888/nns/owa/nns_main.hm01)
[main.hm01](http://nihn-jst.nih.go.jp:8888/nns/owa/nns_main.hm01) (Japanese)
- The Database covers the National Nutrition Survey
(NNS). Data search functions include NNS informa-
tion search, Nutrient contribution information search,
Dish information search, and Nutrient requirement of
each country search.
- Information on Chemicals**
- Web: <http://www.nihs.go.jp/hse/chemical/index-e.html> (English)
- Web: <http://www.nihs.go.jp/hse/chemical/index.html> (Japanese)
- The database includes Legislation in Japan (English
and Japanese), Summary of Environmental Health
Criteria (Japanese), Concise International Chemical
Assessment Documents (CICAD) (Japanese), and
International Chemical Safety Cards (ICSC) (Japanese).
- Primarily Evaluation Reports by the New Energy and
Industrial Technology Development Organization
(NEDO) Chemical Material Management R&D
Program**
- Web: <http://www.safe.nite.go.jp/risk/riskdoc2.html>
(Japanese only)
- Primary evaluation reports for more than 50 chemicals
are presented.
- Risk Assessment Documents**
- Web: http://unit.aist.go.jp/crm/mainmenu/e_1.html
(English for explanation)

- p1840 Web: <http://unit.aist.go.jp/crm/mainmenu/1.html>
p1850 (Japanese only)
- p1860 Risk assessment documents developed based on the
p1870 evaluation of the available scientific data for the chem-
p1880 icals with known or anticipated risks for human
p1890 health and/or the environment. They provide the sci-
p1900 entific basis for regulatory bodies, industries, and the
p1910 public in the decision-making process of chemical risk
p1920 management.
p1600 **Summary of Pesticide Documents and Evaluation
Reports**
p1930 Web: <http://www.acis.go.jp/syouroku/index.htm>
p1610 (Japanese only)
p1620 Web: <http://www.acis.go.jp/eng/indexeng.htm>
(English for explanation)
- p1630 Pesticide Documents prepared by applicants and
Evaluation Reports prepared by the Food Safety
Commission, Cabinet Office are presented.
- s0300 **Organizations (Government)**
- p1640 **Food Safety Commission (FSC)**
p1650 Web: <http://www.fsc.go.jp/english/index.html>
(English)
p1660 Web: <http://www.fsc.go.jp/> (Japanese)
- p1670 Food Safety Commission Secretariat Postal Mailing
Address:
p1680 2-13-10 Prudential Tower, 6th Floor, Nagata-cho,
Chiyoda-ku, Tokyo 100-8989, Japan
p1690 Phone: +81-3-5251-9218
p1700 Fax: +81-3-3591-2237
- p1710 **Ministry of Agriculture, Forestry and Fisheries
(MAFF)**
p1720 Web: <http://www.maff.go.jp/eindex.html> (English)
p1730 Web: <http://www.maff.go.jp/> (Japanese)
p1740 Information on Food Safety:
p1750 Web: <http://www.maff.go.jp/syohi.html> (Japanese
only)
p1760 1-2-1 Kasumigaseki, Chiyoda-ku, Tokyo 100-8950,
Japan
p1770 Phone: +81-3-3502-8111
- p1780 **Ministry of Economy, Trade and Industry (METI)**
p1790 Web: <http://www.meti.go.jp/english/index.html>
(English)
p1800 Web: <http://www.meti.go.jp/> (Japanese)
p1810 Chemical Management:
p1820 Web: [http://www.meti.go.jp/english/policy/c_main_
environment.html#3](http://www.meti.go.jp/english/policy/c_main_environment.html#3) (English)
p1830 Web: [http://www.meti.go.jp/policy/chemical_man-
agement/index.htm](http://www.meti.go.jp/policy/chemical_management/index.htm) (Japanese)
- Public Relations Office p1580
1-3-1 Kasumigaseki, Chiyoda-ku, Tokyo 100-8901,
Japan
Phone: +81-3-3501-1619 p1590
Fax: +81-3-3501-6942
Email: webmail@meti.go.jp
General METI Inquiries
Phone: +81-3-3501-1511
- Ministry of Health, Labour and Welfare (MHLW)**
Web: <http://www.mhlw.go.jp/english/index.html>
(English)
Web: <http://www.mhlw.go.jp/> (Japanese)
Chemical Safety: p1940
Web: [http://www.mhlw.go.jp/new-info/kobetu/
seikatu/kagaku/index.html](http://www.mhlw.go.jp/new-info/kobetu/seikatu/kagaku/index.html) (Japanese only) p1950
1-2-2 Kasumigaseki, Chiyoda-ku, Tokyo 100-8916, p1960
Japan
Phone: +81-3-5253-1111 p1970
- Ministry of the Environment (MOE)** p1980
Web: <http://www.env.go.jp/en/index.html> (English) p1990
Web: <http://www.env.go.jp/> (Japanese) p2000
Health & Chemicals: p2010
Web: <http://www.env.go.jp/en/chemi/> (English) p2020
Web: <http://www.env.go.jp/chemi/> (Japanese) p2030
Godochosha No. 5, 1-2-2 Kasumigaseki, p2040
Chiyoda-ku,
Tokyo 100-8975, Japan p2050
Phone: +81-3-3581-3351 p2060
Email: MOE@env.go.jp p2070
- Organizations (Government Institutes)** s0310
- Agricultural Chemicals Inspection Station (ACIS)** p2080
Web: <http://www.acis.go.jp/eng/indexeng.htm> p2090
(English)
Web: http://www.acis.go.jp (Japanese) p2100
- The Agricultural Chemicals Inspection Station (ACIS) p2110
inspects pesticide quality and ensures proper and safe
use of pesticides. On-site inspection of pesticide man-
ufacturers, distributors, and end users has been con-
ducted by ACIS to prevent distribution/use of
inappropriate pesticides.
- 2-772 Suzuki-cho, Kodaira-shi, Tokyo 187-0011, Japan p2120
Phone: +81-42-383-2151 p2130
Fax: +81-42-385-3361 p2140
- Japan National Institute of Occupational Safety and
Health (JNIOSH)** p2150
Web: <http://www.jniosh.go.jp/> (Japanese only) p2160
- The Japan National Institute of Occupational Safety and p2170
Health (JNIOSH) includes the following two
Institutes, i.e., NIIH and NIIS.

- 1-4-6 Umezono, Kiyose-shi, Tokyo 204-0024, Japan
Phone: +81-42-491-4512
Fax: +81-42-491-7846
- National Institute of Industrial Health (NIIH)**
Web: <http://www.h.jniosh.go.jp/en/index.html> (English)
p2480 Web: <http://www.h.jniosh.go.jp/jp/index.html> (Japanese)
- p2490 The National Institute of Industrial Health (NIIH) has
p2500 the following three functions: (1) to provide scientific
p2510 and technical support on occupational health admin-
p2520 istration, (2) to conduct original research on occupa-
p2530 tional health, and (3) to meet the needs of national and
p2540 international scientific communities and the Japanese
society based on the manpower, facilities, and achieve-
ments of the Institute. NIIH publishes an international
academic journal 'The Industrial Health'.
- p2250 6-21-1 Nagao, Tama-ku, Kawasaki-shi, Kanagawa
214-8585, Japan
p2260 Phone: +81-44-865-6111
p2270 Fax: +81-44-865-6166
- National Institute of Industrial Safety (NIIS)**
p2280 Web: [http://www.jniosh.go.jp/old/anken/english/
p2290 top.html](http://www.jniosh.go.jp/old/anken/english/top.html) (English)
p2300 Web: <http://www.jniosh.go.jp/old/anken/index.html> (Japanese)
- p2310 1-4-6 Umezono, Kiyose-shi, Tokyo 204-0024, Japan
p2320 Phone: +81-42-491-4512
p2330 Fax: +81-42-491-7846
- National Cancer Center (NCC)**
p2340 Web: <http://www.ncc.go.jp/index.html> (English)
p2350 Web: <http://www.ncc.go.jp/jp/> (Japanese)
p2360
- p2370 The National Cancer Center is providing diagnosis,
research, training and the like through cooperation
between administrative departments, hospitals, and
research institutes. It has thus served a central role in
measures to prevent and treat cancer in Japan.
- p2380 National Cancer Center: Tsukiji Campus
p2390 5-1-1 Tsukiji, Chuo-ku, Tokyo 104-0045, Japan
p2400 Phone: +81-3-3542-2511
- p2410 National Cancer Center: Kashiwa Campus
p2420 6-5-1 Kashiwanoha, Kashiwa-shi, Chiba 277-8577, Japan
p2430 Phone: +81-4-7133-1111
- National Food Research Institute (NFRI)**
p2440 Web: [http://nfri.naro.affrc.go.jp/english/ourroles/
p2450 index.html](http://nfri.naro.affrc.go.jp/english/ourroles/index.html) (English)
p2460 Web: <http://nfri.naro.affrc.go.jp/> (Japanese)
- p2470 The National Food Research Institute (NFRI) is imple-
menting wide-ranging research on food science and
technology. The mission of the Institute is to provide
society with a healthy and enriched life, and to assure
the supply of safe food through conducting research.
Its food research projects cover a wide range of scien-
tific and technical fields and are aimed at developing
technological systems.
- 2-1-12 Kannondai, Tsukuba-shi, Ibaraki 305-8642,
Japan
p2230 Phone: +81-298-38-7991
p2240 Fax: +81-298-38-7996
- National Institute for Environmental Studies (NIES)**
Web: <http://www.nies.go.jp/index.html> (English)
Web: <http://www.nies.go.jp/index-j.html> (Japanese)
- Environmental problems have been proliferating from
the relatively localized problems, represented by
industrial pollution, to global problems. Actually,
these problems stem from long-term human activities,
represented by global warming and ecosystem degra-
dation. Many other environmental issues like manage-
ment of wastes and hazardous substances have also
become serious problems. To solve these issues, NIES
is making use of the synergies within its institute, and
paying attention to interdisciplinary collaboration.
- 16-2 Onogawa, Tsukuba-shi, Ibaraki 305-8506, Japan
p2550 Phone: +81-29-850-2314
p2560 Fax: +81-29-851-4732
p2570 Email: www@nies.go.jp
p2580
- National Institute of Advanced Industrial Science and
Technology (AIST)**
p2590 Web: http://www.aist.go.jp/index_en.html (English)
p2600 Web: http://www.aist.go.jp/index_ja.html (Japanese)
p2610
- The missions of National Institute of Advanced
Industrial Science and Technology (AIST) are (1) con-
tribution to a sustainable society, (2) contribution to
industrial competitiveness, (3) contribution to local
industrial development, and (4) contribution to indus-
trial technology policies. Research fields are Life
Science & Technology, Information Technology,
Nanotechnology, Materials & Manufacturing,
Environment & Energy, Geological Survey and
Applied Geoscience, and Metrology and Measurement
Technology.
- AIST Tokyo Headquarters
p2630 1-3-1 Kasumigaseki, Chiyoda-ku, Tokyo 100-8916,
p2640 Japan
p2650 Phone: +81-3-5501-0900
- National Institute of Biomedical Innovation (NIBIO)**
p2660 Web: <http://www.nibio.go.jp/index.shtml#> (Japanese
p2670 only)

- p2920 7-6-8 Saito-Asagi, Ibaraki-shi, Osaka 567-0085, Japan
p2930 Phone: +81-72-641-9811
Fax: +81-72-641-9812
- p2940 **National Institute of Genetics (NIG)**
p2950 Web: <http://www.nig.ac.jp/index-e.html> (English)
Web: <http://www.nig.ac.jp/> (Japanese)
- This institute carries out comprehensive genetic research to advance the knowledge of basic and applied genetics as one of the inter-university institutes. NIG also serves as a center for various genetic resources such as mutant strains, clones and vectors, the DNA Data Bank of Japan, and a DNA sequencing center. Recent generation of massive information on biological systems and their environment calls for new directions in life sciences, such as bioinformatics, system-level analysis, and theoretical approaches to extract knowledge from databases.
- p2960
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p3010
p3020
p3030
- p2750 1111 Yata, Mishima-shi, Shizuoka 411-8540, Japan
p2760 Phone: +81-55-981-6707
p2770 Fax: +81-55-981-6715
- p2780 **National Institute of Health and Nutrition (NIHN)**
p2790 Web: <http://www.nih.go.jp/eiken/english/index.html> (English)
p2800 Web: <http://www.nih.go.jp/eiken/index.html> (Japanese)
- p2810 The National Institute of Health and Nutrition (NIHN) is making numerous contributions to improve nutrition and dietary habit and to advance the knowledge of health and nutrition science for the public. NIHN provides leadership for the public by conducting surveys and research on health maintenance and promotion as well as nutrition and dietary habits.
- p2820 1-23-1 Toyama, Shinjuku-ku, 162-8636 Tokyo, Japan
p2830 Phone: +81-3-3203-5721
p2840 Fax: +81-3-3202-3278
- p2850 **National Institute of Health Sciences (NIHS)**
p2860 Web: <http://www.nihs.go.jp/index.html> (English)
p2870 Web: <http://www.nihs.go.jp/index-j.html> (Japanese)
p2880
- The National Institute of Health Sciences (NIHS) is responsible for conducting basic research to ensure the quality, efficacy, and safety of a wide range of products that directly and indirectly affect the populace. The major activities of NIHS cover extensive testing and research to ensure the quality and safety of drugs, foods and other goods closely related to people's lives. Such activities include biological studies, information services, and co-operation with international organizations.
- p2890 1-18-1 Kamiyoga, Setayaga-ku, Tokyo 158-8501, Japan
p2900 Phone: +81-3-3700-1141
p2910 Fax: +81-3-3707-6950
- National Institute of Public Health (NIPH)**
Web: <http://www.niph.go.jp/English/index.html> (English)
Web: <http://www.niph.go.jp/> (Japanese)
- The mission of the National Institute of Public Health is to carry out education and training of personnel engaging in public health, environmental hygiene and social welfare, and to conduct research in these areas.
- 2-3-6 Minami, Wako-shi, Saitama 351-0197, Japan
Phone: +81-48-458-6111
Fax: +81-48-469-1573
Email: webmaster@niph.go.jp
- National Institute of Radiological Sciences (NIRS)**
Web: <http://www.nirs.go.jp/ENG/nirs.htm> (English)
Web: <http://www.nirs.go.jp/index.html> (Japanese)
- National Institute of Radiological Sciences (NIRS) is the only institution in Japan dedicated to comprehensive scientific research for radiation and health. Experts from many fields collaborate in research and development to enhance the levels of radiological sciences. NIRS has conducted various activities as an institution with advanced equipment and personnel with expertise in a wide range of professional fields including medical science, physics, engineering, chemistry and pharmaceutical science.
- 4-9-1 Anagawa, Inage-ku, Chiba-shi, Chiba 263-8555, Japan
Phone: +81-43-251-2111
Email: kokusai@nirs.go.jp
- National Institute of Technology and Evaluation (NITE)**
Web: <http://www.nite.go.jp/index-e.html> (English)
Web: <http://www.nite.go.jp/> (Japanese)
- The National Institute of Technology and Evaluation (NITE) is offering a vital contribution to society in the fields of: (1) biotechnology including the collection of micro-organisms; (2) chemical management including the integration of risk information of chemical substances; (3) accreditation including accreditation under international standards; (4) consumer product safety including the compilation of safety information of products used in daily life.
- 2-49-10 Nishihara, Shibuya-ku, Tokyo 151-0066, Japan
Phone: +81-3-3481-1921
Fax: +81-3-3481-1920
Email: koho@nite.go.jp
- New Energy and Industrial Technology Development Organization (NEDO)**
Web: <http://www.nedo.go.jp/english/index.html> (English)

- p3400 Web: <http://www.nedo.go.jp/index.html>
p3410 (Japanese)
p3420
p3430 NEDO's activities are industrial technology research
p3440 and development (R&D), environmental technology
R&D, and promote new energy and energy conserva-
p3450 tion technology. NEDO is also responsible for R&D
p3460 project planning and formation, project management
p3470 and post-project technology evaluation functions.
- p3480 NEDO Kawasaki Head Office
p3490 MUZA Kawasaki Central Tower, 1310 Omiya-cho,
Saiwai-ku
p3500 Kawasaki-shi, Kanagawa 212-8554, Japan
Phone: +81-44-520-5100
Fax: +81-44-520-5103
e0320 Email: inf-r6@nedo.go.jp
- p3510 **Radiation Effects Research Foundation (RERF)**
Web: <http://www.rerf.or.jp/> (Japanese & English)
- p3520 The Radiation Effects Research Foundation is the sci-
p3530 entific research institution focused on the study of
health effects of radiation in the survivors of the
p3540 atomic bombings of Hiroshima and Nagasaki. Careful
p3550 analysis of the accurately recorded cancer incidence
and mortality data for the large study population is
contributing fundamental risk information for radia-
tion protection standards worldwide.
- p3280 Hiroshima Laboratory
p3290 5-2 Hijiyama Park, Minami-ku, Hiroshima-shi,
Hiroshima 732-0815, Japan
p3300 Phone: +81-82-261-3131
p3310 Fax: +81-82-263-7279
- p3320 Nagasaki Laboratory
p3330 1-8-6 Nakagawa, Nagasaki-shi, Nagasaki 850-0013,
Japan
p3340 Phone: +81-95-823-1121
p3350 Fax: +81-95-825-7202
- p3360 **Research Center for Chemical Risk Management**
(CRM)
p3370 Web: http://unit.aist.go.jp/crm/index_e.html
(English)
p3380 Web: <http://unit.aist.go.jp/crm/> (Japanese)
- p3390 Research Center for Chemical Risk Management
(CRM) is a center in National Institute of Advanced
Industrial Science and Technology (AIST). CRM con-
ducts innovative research, works with government
and industry to promote environmental safety through
science-based and sustainable solutions, and dissemi-
nates research findings and recommendations about
risk assessment and risk management to the general
public and policymakers.
- 16-1 Onogawa, Tsukuba-shi, Ibaraki 305-8569, Japan p3170
Phone: +81-29-861-8257
Fax: +81-29-861-8934
Email: crm_webmaster@m.aist.go.jp p3180
- Risk Analysis Research Center, The Institute of**
Statistical Mathematics
Web: <http://www.ism.ac.jp/risk/> (Japanese only)
The Institute of Statistical Mathematics:
Web: http://www.ism.ac.jp/index_e.html (English) p3190
Web: http://www.ism.ac.jp/index_j.html (Japanese) p3200
4-6-7 Minami-Azabu, Minato-ku, Tokyo 106-8569,
Japan
Phone: +81-3-3446-1501 p3210
p3220
p3230
p3240
- Organizations (Non-Government)**
- Biosafety Research Center Foods, Drugs and**
Pesticides (An-pyo Center)
Web: <http://www.anpyo.or.jp/> (Japanese only) p3250
582-2 Shio-shinden, Iwata-shi, Shizuoka 437-1213, p3260
Japan
Phone: +81-538-58-1266
Fax: +81-538-58-1293 p3270
- Central Institute for Experimental Animals (CIEA)** p3560
Web: <http://www.ciea.or.jp/index.htm> (Japanese p3570
only)
1430 Nogawa, Miyamae-ku, Kawasaki-shi, Kanagawa p3580
216-0001, Japan
Phone: +81-44-754-4455 p3590
Fax: +81-44-754-4454 p3600
- Chemicals Evaluation and Research Institute (CERI)** p3610
Web: http://www.cerij.or.jp/ceri_en/index_e4.shtml p3620
(English)
Web: http://www.cerij.or.jp/ceri_jp/index_j4.shtml p3630
(Japanese)
- The Chemicals Evaluation and Research Institute, p3640
Japan (CERI) engages in a wide scope of activities
related to chemicals, including experiments, testing,
analysis, evaluations, and research and development.
Its ultimate objective is to further the sound develop-
ment of industry and enhance people's lifestyles by
upgrading the quality of chemicals and assuring their
safety while at the same time emphasizing environ-
mental preservation and the protection of health.
CERI carries out basic research, the development of
testing methods, the development of techniques to
assess risk, data collection and analysis, and other
functions.
- CERI Chemical Safety (Hazard) Evaluation Sheet: p3650
Web: [http://www.cerij.or.jp/db/date_sheet_list/list_ p3660
sideindex_cot.html](http://www.cerij.or.jp/db/date_sheet_list/list_sideindex_cot.html) (Japanese only)

- CERI Chemical Safety (Hazard) Evaluation Report:
Web: http://www.cerij.or.jp/db/sheet/yugai_03.htm
(Japanese only)
- Headquarters
1-4-25 Koraku, Bunkyo-ku, Tokyo 112-0004, Japan
Phone: +81-3-5804-6131
Fax: +81-3-5804-6139
- p3950
p3960
- p3970
Hatano Research Institute, Food and Drug Safety Center (FDSC)
Web: <http://www.fdsc.or.jp/> (Japanese only)
729-5 Ochiai, Hadano-shi, Kanagawa 257-8523, Japan
Phone: +81-463-82-4751
Fax: +81-463-82-9627
- p3980
- p3990
The Institute of Environmental Toxicology (IET)
Web: <http://www.iet.or.jp/> (Japanese only)
4321 Uchimoriya-machi, Jyoso-shi, Ibaraki, Japan
Phone: +81-297-27-4506
Fax: +81-297-27-1225
Email: info@iet.or.jp
- p4000
p4010
p4020
- p4030
Japan Advanced Information Centre of Safety and Health (JAISH)
Web: <http://www.jaish.gr.jp/eng/index.html>
(English)
Web: <http://www.jaish.gr.jp/menu.html> OR <http://www.jaish.gr.jp/menu2.html> (Japanese)
- p4050
p3850
p4060
- p3860
p3870
Chemical information:
Web: http://www.jaish.gr.jp/user/anzen/kag/kag_main01.html (Japanese only)
- p3880
p3890
p3900
Anzen Eisei Sogo Kaikan, 5-35-2 Shiba, Minato-ku Tokyo 108-0014, Japan
Phone: +81-3-3452-3385
- p3910
Japan Chemical Industry Association
Web: <http://www.nikkakyo.org/English/index.php3>
(English)
Web: <http://www.nikkakyo.org/> (Japanese)
- p3920
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p3940
The objectives of JCIA are (1) investigation and research on the essentially important matters for the chemical industry such as production, distribution, and consumption of chemical products, (2) investigation and research on the various issues related to the chemical industry such as technology, labor, environment, and their policy planning and promotion, (3) commendation of the outstanding achievements that contributed to the technological development and safety of the chemical industry, (4) collection and supply of information related to the chemical industry and its publication, (5) advocacy, communication, and educational activities for the development of relations between the chemical industry and the public, (6) undertaking a workshop and seminar for the chemical industry, and (7) communication and co-operation with domestic and overseas organizations related to the chemical industry. JCIA is a member of the International Council of Chemical Associations (ICCA).
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- Chemical Product Database:
Web: http://61.204.48.89/jciadb/index_e.html
(English)
Web: <http://61.204.48.89/jciadb/> (Japanese)
- The database provides information on chemical products produced, imported, and marketed by chemical companies. This includes components, composition, use, hazard, and toxicity of products and contact addresses. A Library of MSDS is also provided.
- Sumitomo Fudosan Rokko Bldg. 7F, 1-4-1 Shinkawa, Chuo-ku Tokyo 104-0033, Japan
Phone: +81-3-3297-2550
Fax: +81-3-3297-2610
Email: chemical@jcia-net.or.jp
- Japan Chemical Industry Ecology-Toxicology & Information Center (JETOC)**
Web: http://www.jetoc.or.jp/english_index.html
(English)
Web: <http://www.jetoc.or.jp/> (Japanese)
- The objectives of Japan Chemical Industry Ecology-Toxicology & Information Center (JETOC) are to collect and organize information related to safety of chemical substances and to enhance joint testing.
Japanese Translation version of OECD SIAP(SIDS Initial Assessment Profile):
Web: http://www.jetoc.or.jp/HP_SIDS/SIDSbase.htm
(Japanese only)
- Chemical Safety Information:
Web: <http://www.jetoc.or.jp/indexanzensei.html>
(Japanese only)
- Sumitomo Fudosan Rokko Bldg., 1-4-1 Shinkawa, Chuo-ku Tokyo 104-0033, Japan
Phone: +81-3-3297-8051
Fax: +81-3-3297-8055
- Japan Crop Protection Association**
Web: <http://www.jcpa.or.jp/english/index.htm>
(English)
Web: <http://www.jcpa.or.jp/> (Japanese)
- Japan Crop Protection Association (JCPA) is the non-profit organization of Japanese manufacturers, formulators and distributors of agricultural crop protection products (CPPs). JCPA promotes mutual information exchange and cultivates mutual friendship among its members.

- Data of Crop Protection Products:
 Web: <http://www.jcpa.or.jp/nouan/index.html>
 (Japanese only)
 1-5-8 Muromachi, Nihonbashi, Chuo-Ku, Tokyo 103-0022, Japan
 Phone: +81-3-3241-0215
 Fax: +81-3-3241-3149
 Email: nouyaku-hp@jcpa.or.jp
- p4440 **Japanese Foundation for Cancer Research**
 p4450 Web: <http://www.jfcr.or.jp/english/index.html>
 p4460 (English)
 p4470 Web: <http://www.jfcr.or.jp/> (Japanese)
- p4480 Japanese Foundation for Cancer Research (JFCR) was
 p4490 established in 1908 as the first institute in Japan specializing in cancer. Since the establishment of the Cancer Institute and its affiliated hospital, JFCR has been a leader in the research and treatment of cancer in Japan through its activities by encouraging close collaboration between basic and clinical researchers.
 p4500
 p4510 3-10-6 Ariake, Koto-ku, Tokyo 135-8550, Japan
 Phone: +81-3-3520-0111
 Fax: +81-3-3520-0141
- Japan Industrial Safety and Health Association (JISHA)**
 p4520 Web: <http://www.jisha.or.jp/english/index.html>
 (English)
 p4530 Web: <http://www.jisha.or.jp/> (Japanese)
- p4540 Japan Industrial Safety and Health Association (JISHA) supports the activities of business owners and business groups to prevent industrial accidents. JISHA's activities are public relations and publication, collection and release of information, research and surveys, technical support, safety and health education, promotion of zero-accident everyone participation campaigns, support to small and medium-sized enterprises, support to health programs, promotion of creating comfortable workplaces, international cooperation, and toxicity research on chemical substances.
 p4550
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 p4570
- p4360 Headquarters
 p4370 Shiba 5-35-1, Minato-ku, Tokyo 108-0014, Japan
 p4380 Phone: +81-3-3452-6841
 p4390 Fax: +81-3-3453-8034
- p4400 **Japan International Center for Occupational Safety and Health (JICOSH)**
 p4410 Web: <http://www.jicosh.gr.jp/english/> (English)
 p4420 Web: <http://www.jicosh.gr.jp/Japanese/index.html>
 (Japanese)
- p4430 Japanese firms are often placed in a difficult position in proceeding with effective and efficient safety and health management or taking appropriate countermeasures. In addition, although ensuring safety and maintaining and improving the health of workers are essential requirements that are commonly recognized throughout the world, there still are such problems as information or technologies relating to safety and health that are owned by specific countries are not commonly shared by all parties concerned. JICOSH works to help resolve these issues.
 p4190
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 p4220
 p4230
 p4240
- 1-4-6 Umezono, Kiyose-shi, Tokyo 204-0024, Japan
 p4250 Phone: +81-42-495-5931
 p4260 Fax: +81-42-495-5936
 Email: info@jicosh.gr.jp
 p4270
- The Japan Food Chemical Research Foundation**
 p4280 Web: <http://www.ffcr.or.jp/zaidan/FFCRHOME.nsf/pages/eng.h-page> (English)
 Web: <http://www.ffcr.or.jp/> (Japanese)
- The Foundation collects and compiles domestic and overseas information about food additives, pesticide residues, apparatus and containers/packages for food and other topics related to the field of food chemistry on this website. The Foundation supports research activities aimed at developing safety evaluation methodologies for food additives, and at reducing the use of food additives.
 p4290
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 p4330 Information on Food Safety Commission, Evaluation to Health Effects:
 p4340 Web: <http://www.ffcr.or.jp/zaidan/FFCRHOME.nsf/pages/info.cao> (Japanese only)
 p4350 1-11-1 Sanwa-cho, Toyonaka-shi, Osaka 561-0828, Japan
 Phone: +81-6-6333-5680
 Fax: +81-6-6333-5491
 Email: admin@ffcr.or.jp
- ### Universities
- s0330
 p4580 Few universities include 'toxicology' in name of their departments or laboratories. However, many universities with departments, schools, or faculties of medicine or pharmaceutical sciences have toxicology-related departments.
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- Aichi Medical University**
 p4590 Web: <http://www.aichi-med-u.ac.jp/> (English)
 p4600 Web: <http://www.aichi-med-u.ac.jp/> (Japanese)
 p4610 Nagakute, Aichi 480-1195, Japan
 p4620 Phone: +81-561-62-3311
 p4630
- Asahikawa Medical College**
 p4640 Department of Pharmacology
 p4650 Web: <http://www.asahikawa-med.ac.jp/new04/en/index.html> (English)
 p4660 Web: <http://www.asahikawa-med.ac.jp/> (Japanese)
 p4670

- p5060 1-1-1 Midrogaoka-Higashi-2-jyo, Asahikawa-shi, Phone: +81-58-230-6000 p4680
p5070 Hokkaido 078-8510, Japan Email: igakubu@gifu-u.ac.jp
p5080 Phone: +81-166-68-2115 p4690
p5090 Email: sho-shomu@jimu.asahikawa-med.ac.jp p4700
p5100 **Azabu University**
School of Veterinary Medicine, Department of Veterinary Medicine, Department of Animal Science and Biotechnology p4710
p5110 Web: <http://www.azabu-u.ac.jp/index-e.html> (English) p4720
p5120 Web: <http://www.azabu-u.ac.jp/index-e.html> (English) p4730
p5130 Web: <http://www.azabu-u.ac.jp/> (Japanese) p4740
p5140 1-17-71 Fuchinobe, Sagamihara, Kanagawa 229-8501, Japan p4750
p5150 Phone: +81-42-754-7111
p5160 Fax: +81-42-754-7661
p5170 Email: www-box@azabu-u.ac.jp
p5180 **Chiba University**
Graduate School of Pharmaceutical Sciences and Faculty of Pharmaceutical Sciences, Toxicology and Environmental Health p4760
p5190 Web: <http://www.p.chiba-u.ac.jp/e-index.html> (English) p4770
p5200 Web: <http://www.chiba-u.ac.jp/e/index.html> (English) p4780
p5210 Web: <http://www.p.chiba-u.ac.jp/> (Japanese) p4790
p5220 Nishi-Chiba Campus p4800
p5230 1-33 Yayoi-cho, Inage-ku, Chiba-shi, Chiba 263-8522, Japan
p5240 Phone: +81-43-251-1111
p5250 Fax: +81-43-290-2041
p5260 Email: www.admin@p.chiba-u.ac.jp
p5270 **Fujita Health University**
p5280 Web: <http://www.fujita-hu.ac.jp/english/> (English) p4820
p5290 Web: <http://www.fujita-hu.ac.jp/> (Japanese) p4830
p5300 1-98 Dengakugakubo, Kutsukake-cho, Toyooka, Aichi 470-1192, Japan p4840
p5310 Phone: +81-562-93-2000 p4850
p5320 **Fukuoka University**
p4940 School of Medicine, Pharmaceutical Sciences
p4950 Web: <http://www.fukuoka-u.ac.jp/english/indexe.htm> (English) p4860
p4960 Web: <http://www.fukuoka-u.ac.jp/> (Japanese) p4870
p4970 8-19-1 Nanakuma, Jonan-ku, Fukuoka 814-0180, Japan p4880
p4980 Phone: +81-92-871-6631
p4990 Email: fupr@adm.fukuoka-u.ac.jp p4890
p5000 **Gifu University**
p5010 School of Medicine p4900
p5020 Web: <http://www.gifu-u.ac.jp/english/index.shtml> (English) p4910
p5030 Web: <http://www.gifu-u.ac.jp/> (Japanese) p4920
p5040 1-1 Yanagido, Gifu-shi, Gifu 501-1194, Japan p4930
p5050 Laboratory of Toxicology p5330
Web: <http://www.hokudai.ac.jp/veteri/organization/env/toxicol/home-e.html> (English)
Web: <http://www.hokudai.ac.jp/veteri/organization/env/toxicol/Toxicology.htm> (Japanese) p5340
Kita 18, Nishi 9, Kita-ku, Sapporo 060-0818, Japan p5350
Phone: +81-11-716-2111 p5360
Fax: +81-11-706-5190 p5370
Email: vsop@vetmed.hokudai.ac.jp p5380
Hokuriku University p5390
Faculty of Pharmaceutical Sciences p5400
Web: <http://www.hokuriku-u.ac.jp/english/index.html> (English) p5410
Web: <http://www.hokuriku-u.ac.jp/> (Japanese) p5420
1-1 Taiyogaoka, Kanazawa 920-1180, Japan p5430